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A Retrospective Study and Critical Evaluation of Radio Education in the Public Schools

Teresa H. Glockling

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A RETROSPECTIVE STUDY AND CRITICAL EVALUATION OF RADIO EDUCATION IN THE PUBLIC SCHOOLS
A RETROSPECTIVE STUDY AND CRITICAL EVALUATION OF RADIO EDUCATION IN THE PUBLIC SCHOOLS

By
TERESA H. GLOCKLING

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Education

DIVISION OF GRADUATE INSTRUCTION BUTLER UNIVERSITY INDIANAPOLIS 1938
PREFACE

This study has grown out of an interest in Radio Education inspired by a meeting of teachers called by the late Dr. Paul C. Stetson, then Superintendent of the Indianapolis Public Schools, for the purpose of discussing radio instruction. The practical use of radio in my own classroom has helped to foster this interest. These reasons, together with the nation-wide interest in radio education, has helped to make my subject, to me, a most fascinating one.

I wish to acknowledge the systematic and sympathetic guidance of Dr. Albert Mock. In addition I wish to express my appreciation to Miss Blanche C. Young, Assistant Director of Publications for the Indianapolis Public Schools, for her kind assistance in helping me report the Indianapolis radio project. Lastly, I wish to thank the librarians at the Butler University Library, Central Library, State Library and Teachers' Special Branch Library respectively.

T. H. G.

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INTRODUCTION

Since the Civil War a phenomenal evolution has taken place in the American public school system. There have been rapid developments in courses of study, radical changes in methods of teaching and a decided extension of buildings and equipment used in the teaching process. Libraries, work shops, museum collections, maps, charts, stereoptican slides and phonograph records have been added to augment text-books, desks and blackboards. Motion pictures, the stereoptican and the talking pictures are fairly well established in the educational pattern. Now radio is being tested for its usefulness as an educational device. 

The Purpose of the Study

It was not easy to establish these materials or equipment in the school. Each was thoroughly investigated, experimented with, and carefully evaluated before being generally accepted as a desirable teaching

aid. Such investigations, experimentations and evaluations are necessary. The education of the younger generation is too important to permit the introduction of what might prove to be a worthless fad or fancy, merely upon the recommendation of a few enthusiastic individuals, or because a few educators have accepted it after a superficial examination.

The radio in education is a new art. Its real potentialities have only lately been considered. What is needed more than anything else is serious experimentation, even at the cost of some failures. The trouble has been that radio has developed so rapidly, education has not had time to stop and plan for its most effective use. A problem, however, often presents an opportunity. The fact that educators are seriously discussing the problem of radio education is a proof that they believe that this new marvel has something to offer education. The growth of interest in the school use of radio has been rapid. In the beginning large plans were made for radio in education. The conviction was expressed upon occasion that this scientific marvel would replace the teacher in the classroom and that all subjects could be taught from the microphone. Some even visioned whole school systems taught by the country's most expert teachers. The intervening years, however, have proved the fallacy of such fantastic claims. The purpose of this study is to investigate and report the pioneer experiments which have been carried on in radio education; to determine exactly

what radio has to offer education; to ascertain the correct techniques of teaching by radio and to evaluate its worth as a classroom device.

The Plan of the Study

There are two aspects which present themselves in the study of education by radio. One is the broader view -- that of considering the educational features offered by the networks for the general education of the public and the narrower view has to do with the radio instructional courses specifically intended for use in the classroom. It is with the latter view that this thesis is chiefly concerned although mention is made of some programs, not primarily intended for school consumption but which may be used in the classroom. The study is resolved around two definite phases. First, a retrospective review of some of the more interesting experiments which have been tried and second, a critical evaluation of radio as a classroom device. The report consists of ten chapters including introductory and concluding chapters. In the body of the investigation, chapters two, three and four deal with the history of radio education. The fifth chapter outlines the objectives of radio education and includes a brief explanation of each. How the schools may use radio most effectively is described in chapters six and seven. Chapter eight deals with certain points that should be considered in evaluating radio instruction and some problems in future development are pointed out in the ninth chapter.

Justification of Such a Study

The history of any educational movement is both interesting and inspirational and it must be admitted that evaluation is an important
and necessary part of such a movement. If the radio is to become a generally accepted educational tool, and if the methods and materials of school broadcasting are to be improved, it is clear that there must be evidence of its effectiveness in furthering the cause of education. The first and obvious step in any program of evaluation is the formulation of objectives. Radio education can be evaluated only in terms of what it is intended to do.

Mr. Tyler, in an address delivered at the First National Conference on Educational Broadcasting, pointed out that these objectives must be stated in terms of specific changes in the behavior of boys and girls. These changes will be in such things as attitudes, reading habits, interests, skills, techniques of thinking, increased sensitivity to problems, and many others. Although the acquiring of facts is very important, this should not be the most important aim of radio education. 3

After considering the objectives for radio education certain other problems present themselves. It is not sufficient to know what radio expects to do but such questions as how radio may be used effectively in the classroom, its possibilities and limitations and the problems to be met in future development need to be studied carefully. It will be difficult to be entirely open minded on the subject. Radio is a part of our lives. It is at times a blatant nuisance, at others a priceless

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blessing. There is danger on the one hand of condemning it as a menace to real education and on the other hand to wax enthusiastic and hail it as a panacea for all educational ills. Extremes are dangerous but the investigation will seek to discover the facts and upon these, the attempt will be made to reach valid conclusions. It is hoped to show that radio has a place in the schools but with the contention that no device has a place in education unless it helps the teacher achieve the real objectives of education. Radio should do what the teacher cannot do; it should not try to do what she is able to do more efficiently. If this study does nothing more than point out the potential educational applications of the broadcasting movement, and the need for a mastery of the techniques of teaching by radio, which, after all, are the basic problems to be considered in utilizing radio in education, the results will justify the effort involved in making the investigation.

Limitations of the Study

Since the material for the study consists principally of the consensus of well-informed opinion on the effective use of radio instruction, it has the limitations and advantages of such a study. Years of research and experimentation would be needed to solve the numerous educational and broadcasting problems involved in effective teaching by radio. The scope of the study is limited to a consideration of the classroom use of radio. No attempt has been made to treat the problems of the broadcasting teacher either in preparing or presenting programs.

Sources of Material

The information included in this study is drawn from personal observa-
tion based on actual experience in using radio in the classroom and from the writings of many authorities on education by radio. These writings are found in periodical publications, year books of radio committees and conferences, educational bulletins, books, and special pamphlets dealing with the subject. The services of the National Committee on Education by Radio, which maintains a clearing house for research, will be utilized.

While the study was approached with a feeling of humility, it is hoped that it will make some small contribution to the cause of radio education.
CHAPTER II

PIioneer Efforts in Radio Education

Of all the phenomena of our age of wonders, radio is perhaps the most astounding. Not many years have passed since amateurs, sitting in quiet rooms with wires dangling from the ceiling and feet tangled in a maze of coils, tried to "get distance" on home-made crystal radio receiving sets. Quiet was an essential requisite for reception. The moving of a chair or the rustling of a paper caused the faint scratching noises to fade into the unknown from whence they came. In an incredibly short time radio was lifted from the amateur class to the ranks of professionalism and in the autumn of 1920 the first commercial radio receiving sets for home entertainment were offered to the American public.¹

The improvements in radio reception beggar description. In less than twenty years the world has seen this scientific marvel develop from the cumbersome battery sets with ear-phones to the present efficient receivers equipped for short wave reception. Scientists tell us that television is not far distant. A newspaper account reports that it will be a feature of the radio exhibit at the 1939 World's Fair in New York City. In a large measure the rapidity with which radio has risen to its

present position as a social factor has been due to the fact that it "was born of commercial parents and has been constantly and consistently supported by them."\(^2\) This factor has been the cause of much bitter friction between "education" and "big business." However, the world is a better place because Marconi was inspired, along with the rest of the ingenious crew of inventors and engineers who have made this modern miracle possible.\(^3\) It is not definitely known just when nor to whom occurred the idea of education joining forces with this new scientific invention. We do know, however, that as soon as the broadcasting of voices and music became an accomplished fact, educators and others began to see its educational possibilities.

In 1920 stations WWJ of Detroit and KDKA of Pittsburgh began broadcasting educational features for adult listeners. One year later Mr. Armstrong Perry, the Radio Council of the Payne Fund, visited the United States Bureau of Education and proposed that it undertake the broadcasting of educational programs to the public schools of the nation. Dr. J. J. Tigert, the Commissioner of Education at that time, felt that there was need for such an educational program, but stated that there seemed to be some sentiment against the procedure because of the prejudice against anything that hinted at federal control of education. He asserted, however, that the Office was willing to aid in this venture. Accordingly,


\(^3\)Max J. Hersberg, "Radio and the Schools," *Education*, LVII (December, 1936), P. 214.
he asked for information concerning available broadcasting stations, the number of radio receivers in use and other elements in the situation. In his Biennial Survey of Education for 1920-1921, he reported that sixty educational institutions were broadcasting educational and musical programs, and that among these were forty-seven colleges and universities. It was also reported that there were between a million and a million and a half receivers in the United States and from three to four million listeners. Mr. Tigert and Mr. Perry received little cooperation in their pioneer efforts, but Mr. Tigert did not lose sight of the educational possibilities of radio. In March, 1924, he wrote, "The school, the library and the newspaper are usually ranked as the three great educational agencies. The radio promises to take its place as the fourth." 

The Colleges use radio

As nearly as this research can determine, the first educational institution to plan and carry out a broadcasting program was Grove City College in Pennsylvania. The nature of the program could not be determined as it was given very little public recognition. The very first public notice given to education broadcasting through educational agencies was an article, entitled "College Lectures by Radio," which appeared in the Literary Digest for May 13, 1922. This article dealt with the broad-

casting being done by the universities of Iowa, Nebraska and Wisconsin. This was the forerunner of many announcements of lectures being offered by colleges. On October 24, 1922, Indiana University presented two lectures over station WLK, the News-Ayres-Hamilton radio station at Indianapolis. One, entitled "Why more boys and girls go to college," was delivered by President William Lowe Bryan and the other on diphtheria prevention by Dr. B. D. Myers, dean of the School of Medicine. The lectures, which were continued for a short time, covered many different subjects in the fields of science, literature, medicine, world news, travel, social customs and dietetics. In the same year, 1922, Columbia University was invited by the owners of one of the early broadcasting stations to arrange a series of half-hour educational programs. The university officials accepted the offer and all seemed well for radio education.

**Business vs. Education**

Then the radio industry began to grow with such amazing speed that it almost got out of everyone's control. Soon the half-hour was no longer available for Columbia University. Big business interests had awakened to the tremendous possibilities of nation wide advertising by

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Broadcast stations began to spring up with dazzling rapidity. In December, 1921, there were only five stations on the air, but by September, 1922, there were five hundred and thirty two more. It is easy to understand why programs sponsored by manufacturers became the order of the day. Advertisers were willing to pay well for the most desirable hours and the experience of Columbia University in losing its half-hour was merely an illustration of what was happening throughout the country. Many radio educators were disgruntled and felt that they had been forced off the air.

Then began a long and bitter struggle between education and monopolistic industrial interests which led to the formation of definite laws by Congress and decisions by the Supreme Court guaranteeing specific allocations of time on the air for educational purposes. While educational leaders were partially satisfied, they felt that their rights to radio time had been usurped by business interests. However, with the creation of the Federal Communications Commission in 1934, hostilities have abated somewhat. Educators have not been satisfied with the radio situation in the United States but have been unable to advance a really practicable solution to the problem.

The Radio Stations Cooperate

Even during the very early days of the litigation between education and business many pioneer attempts to utilize radio for instructional purposes were being tried in various parts of the country. As far as can

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be determined, the first noteworthy radio work done along instructional lines were the college lectures mentioned in the *Literary Digest*, to which reference has been made. The universities of Iowa and Nebraska set up their own broadcasting stations and sent out regular courses of lectures. These courses were of great benefit to students who were unable to attend the colleges. At this time a few high schools in various parts of the nation adopted radio for their own immediate service, installing systems by which teachers and principals might talk to all the classes in their respective rooms at the same time. But for radio to function effectively as an educational device, these pioneers felt that they must have the cooperation of a large station. Fortunately, at this stage in the development of radio instruction, two eastern stations offered their services for education courses. These were stations WOR in Newark, and WBZ in Boston.

Station WOR did not attempt to reach the schools in the day time, but confined itself to broadcasting a series of educational talks and lectures by various high school teachers in the evenings when both adults and children might benefit from them. Courses in algebra, music, civics, and physical culture were offered. However, all these instructive courses were given independently by station WOR with no guidance from the Newark Board of Education.

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The Massachusetts Bureau of Education, Division of University Extension, as far as can be ascertained, was the first organization to give instructional credit courses by radio. In the years 1923 to 1927, twenty one courses of eight lessons each were given over station WBZ. The speakers were paid for their services, and the expenses were met by enrollment fees paid by interested persons, who followed the courses of instruction. Supplementary literature and examination questions were sent out at regular intervals. University credit was granted students who had satisfactorily fulfilled all requirements. The amount of credit allowed was left to the discretion of the respective institutions whose pupils were enrolled. The courses were very popular and in the four years, over four thousand students were enrolled and thirty-four states and six Canadian provinces were represented in the student body.13

First use of Radio in the Classroom

These pioneer efforts, while significant of their contribution to the cause of radio in education, were not intended primarily for intramural classroom consumption. Information on the subject is rather meager, but credit for being the first to use radio in the schoolroom seems to go to a school in Atlantic City, New Jersey. In 1923, this school was fortunate enough to receive from a generous patron one of the finest battery sets available at the time.14 Before long it became apparent that the practical


benefit of this first endeavor for really serious work in the school was very limited. The main reason was the lack of available material. Daytime broadcasting was inefficient as far as distance was concerned. Anything beyond comparatively near stations brought in disagreeable fading and static. From the local stations the subject matter was limited. There were a few important events, notably the funeral services of Woodrow Wilson, of which the school received a clear description by radio. But after a time the use of the radio was discontinued as far as school use was concerned. This experiment, while not a success, planted in the minds of educational authorities the seed which was to bear fruit in the near future.

First School of the Air

About the same time that the Atlantic City school was making its rather futile experiment, the Haaren Cooperative High School of New York City, was carrying on a very unique project in class-room instruction by radio. The project started as an outgrowth of the radio clubs, which had been organized by most of the high schools of the city. One of the most flourishing of these clubs was in the Haaren High School. The faculty director of this club, Mr. Fred Siegel, himself a radio enthusiast, became impressed with the potential value of radio as an aid to educational systems and arranged with station WJZ for the first experiment. Miss Golda M. Goldman states in her report of this early effort that

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15 Ibid., pp. 61-62.
the first lesson was broadcast on April 4, 1923. This was a lesson in machine accounting broadcast by the head of the commercial department at Haaren. Loud speakers were placed in the commercial classroom at the school and others were at the Bureau of Education building. In the studio at WJZ two students received the lesson, others took it at the Board of Education building, and the remainder of the class listened at the school. Perfect results were reported although the problems dictated were entirely new to the students. This correctness of the pupil’s work indicated that radio reception had been satisfactory.

As a result of this first success, several experiments were conducted during the months of May and June. One lesson in modern history and one in economics were broadcast with the entire class at the studio, so that actual recitations went out over the air. Talks were presented on community civics and health and a dictation lesson for a shorthand contest was given. All this material was received in fifteen of the city high schools.17 The work was well organized. Each subject was planned under the personal direction of a supervisor of that particular subject. Results were systematically checked. It was noted that there was an intense concentration on the part of the pupils with a “negligible need of discipline during the time of the radio lesson.”18

Each of the features was meant to demonstrate a definite way in

17 Ibid., p. 482.

which radio might assist in actual educational practice. The machine calculation lesson, with students in three different places, proved that one instructor at a central point could conduct a lesson which could be taken by many classes simultaneously. It was decided that, if for any reason, there should be a shortage of teachers in a given subject, it would not be necessary for students to go untaught, as some degree of instruction could come to them by radio. The lessons broadcast with classes at the studio showed the supervisory aspects of radio instruction. Teachers agreed that talks were the least desirable type of radio program for classroom use.

The experiment was such a success that it was continued until May, 1924. Programs were broadcast from two to three o'clock each afternoon on consecutive school days. They included addresses by executives and department heads, fifty-three typical class recitations dealing with various subjects and thirty-two musical programs. Many communities outside of New York had listened to the broadcasts and outlines of lessons had been asked for.

The experiment at Haaren, while apparently premature, was provocative of many interesting speculations on the part of educators throughout the country. The question as to whether radio would ever supplant the teacher was raised. Mr. Burnham, principal of Haaren High School made a significant observation on this subject, significant because it was the forerunner of many similar observations:

19Armstrong Perry, op. cit., p. 48.
Radio can never replace the actual teacher in her classroom, for after all the most important thing about a teacher is her personality, and this is not obvious to a child who cannot see her.  

The idea of having pupils come up to the transmitter and talk in a regular class recitation was considered good, because the others could hear the questions asked, corrections made and instructions given. Dr. Gustave Straubenmuller, Associate Superintendent of Schools of New York City, at the time of the project, agreed with this and commenting further on the subject of radio's replacing the teacher made the following statement:

A most important reason why it (radio) cannot ever replace the actual teacher is that questions arising in the minds of students must be answered immediately or the opportunity for real service is lost. Furthermore, no matter how clear an instructor may think he has made a subject, there are always those who do not understand. The teacher standing before his class sees the bewilderment on the face before him, and immediately pausing, gets at the root of the trouble and clears it up. Unless he can do this, the student is lost indeed and radio lessons prevent this immediate help from being given.

This was the first successful union of radio and classroom instruction. It was only a start but it was reported as a most successful innovation in school administration and a forerunner of future achievements. It proved that radio instruction might be successful as soon as the problems of improved reception, finance and administration were solved. This school was the pioneer of all Schools of the Air.

Here and there over the nation during this embryonic period of educa-

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20 Golda M. Goldman, "Enlarging the Classroom," op. cit., p. 482.

21 Ibid., p. 483.
tional broadcasting many impractical things were attempted and many wild and speculative forecasts were made. Some educators, inspired by the Haaren project, hailed radio as a wonderful new device that should be set to work along with books, blackboards and buildings. But many of the early trials met a fate similar to the Atlantic City effort. It was the repeated story of the absence of a regular supply of broadcast programs suitable for school consumption. The listening was unorganized and the schedules were uncertain. Even when the feature to be heard was satisfactory, it caused too much confusion to invite much repetition. It became apparent that schools must have a definite supply of programs to tune in if radio was to prove itself of any real value to the schools desiring to use it. In spite of these almost overwhelming obstacles educational broadcasting "marched on."

Pioneer Experiments in California

California was the next state to join the forward march. During the year 1923, radio programs for the benefit of the California rural schools were broadcast under the direction of the State Commissioner of Elementary Schools. The subjects discussed were local geology and history. The lectures were given on Monday morning at nine o'clock. They were discontinued after a few months because the listening audience was too small to warrant the expense entailed. The only result found concerning this effort was the report that tardiness in the schools using the programs was reduced to a minimum.22

22Armstrong Perry, op. cit., p. 48.
Sharing honors with Haaren as bright spots in the parade of experiments was the one carried on in Oakland, California. This school of the air was organized on April 30, 1924 under the direction of Mr. Virgil E. Dickson. His idea met with only passive approval from his colleagues in Oakland. The feeling among the teachers, principals and administrative officers was that perhaps a musical entertainment, or a lecture by some noted person might occasionally be of value to a class but apart from that they could see little or no value to be derived from the use of radio in pupil instruction. Mr. Dickson must have been very convincing in his arguments because the school authorities agreed to let him proceed with his experiment, which was to consist of eight lessons. These were conducted through the courtesy and whole-hearted cooperation of the General Electric Radio Broadcasting Station KGO.23

Mr. Dickson, in describing the experiment, reports that a committee composed of supervisors and teachers with a wide range of interest was appointed to plan the course. With no previous knowledge as to exactly what courses were adaptable to radio use, their's was a Herculean task. Coupled with this lack of knowledge was the lack of actual experience in broadcasting. Few teachers were willing to stand before a microphone and risk their professional reputations by teaching invisible classes in fifteen specified schools, not knowing how many more might be listening in, realizing that unseen critics were actually stationed in every school and

that thousands of people in homes or places of business might be listening. After carefully considering the matter the committee asked eight teachers to prepare lessons. All hesitated at first but not one refused. Only two of the eight had ever talked before a microphone. In speaking of their effort Mr. Dickson comments as follows:

Their experience, therefore, covered virgin soil, the participants coming absolutely from the unknown to face whatever truths could be developed.²⁴

The first lesson was in guidance and was conducted by a high school counselor. She talked to eighth grade classes, soon to enter the high school, about the courses of study and the problems they would have to face in the high school. After the broadcast many favorable comments were received from pupils and parents.

Lesson two was given by a music teacher. Her subject was "Folk Songs" and the lecture was received by the seventh, eighth and ninth grades. During the lecture the students were requested to take part in the lesson by singing with the radio teacher.

The third lesson was given by an eighth grade geography teacher. Her subject was "Natural Resources of Our own State." Maps, pictures and other visual aid materials were used by the classroom teachers. The broadcast lesson was followed by class discussion and reference material was suggested.

The subject of lesson four was literature. A lecture on Shakespearean literature was broadcast to pupils of the senior high school.

²⁴Ibid., p. 280.
The fifth lesson was broadcast by a junior high school history teacher. His subject was "American Indians" and was received by seventh grade students. The lecturer was well informed about his subject and the listeners were intensely interested.

Lesson six was given by the head of the commercial department of one of the Oakland high schools. This was a lesson in addition with emphasis placed on checking for accuracy. In addition to the listeners in the respective schools, four pupils received the lesson at the studio. All were provided with pencils and paper with which to follow the directions of the radio instructor in solving problems and checking results. At the close of the period all handed in their papers for comparison and grading. This lesson brought responses of unusual interest from many parents.

The seventh lesson was unique from a "subject" standpoint. It was an attempt to teach penmanship, a subject which most teachers admit needs constant demonstration to be taught effectively. This lesson was broadcast by a supervisor of handwriting to seventh and eighth grade pupils. Again four pupils were seated before the microphone. All pupils, both in the studio and in the schools were furnished with pens and paper. A regular lesson was then given. The small class in the presence of the instructor acted as a control group by which the speed and effectiveness of her lesson were determined. At the close of the period papers were collected and sent to the supervisor for observation and criticism.

The last lesson consisted of several corrective physical exercises by a director of physical education. This completed the course.
Each lesson was planned to cover a period of twenty minutes. Four or five minutes of music furnished a prelude so that the receiving sets might be properly tuned in at the schools that were to take part in the lesson. A member of the committee was stationed in each classroom receiving the lesson to make careful observation such as the kind of reception, quality of the speaker's voice and the attitude of the class. This committee met after the lesson to compare notes, and to lay plans for the improvement of the next lesson. Throughout the series pupils in practically all of the schools were able to follow the discussions completely, to take down references for further reading and to develop topics presented by the radio instructors. Some of the teachers used the lessons to motivate their written and oral compositions. 25

The experiments disclosed a number of facts which could be stated with comparative authority and opened up a futile field of exploration and discovery in new methods and means for public school education. Outstanding among the results was the interest taken in the experiment by parents and adult members of the community. One surprising fact was noted. The reports from listeners indicated that arithmetic and penmanship lessons were the most popular and apparently the most helpful. Other important factors revealed by the experiment were the need for perfect planning for the lessons and the urgent necessity for providing some definite training for broadcast teachers.

The success of the first series of eight lessons inspired the committee to continue the experiment the next year on a schedule of two twenty-minute periods a week. During the school year 1925-1926, thirty-six lessons were presented embracing most of the curriculum subjects. Each lesson was designed for a particular grade ranging from fifth to tenth. Teachers were enthusiastic about the experiment. Many schools were equipped with receiving sets and Los Angeles County reported every elementary school equipped to receive the broadcasts. Suddenly this very promising experiment came to a most unnatural end when the director accepted a position in another city.26

Mr. Dickson in summing up the results of this early endeavor made some very prophetic statements concerning the future uses of radio for classroom use.

Our experiment with radio classroom instruction leads me to predict that development in this field will be very helpful and very rapid. Through it will come a stronger tie between home and school than has ever been possible before. Better training of children in concentration, in quick accurate thoughtful obedience to a single direction is surely one result. All teachers will receive a stimulus by occasionally observing a lesson developed by another. Supervision of new methods and new subject matter will be more direct.

Travel or contact with the world through the eye, has long been recognized as having a liberal and wholesome effect upon the education and character of a child. Who can vision the significance of the fact that distance for the ear has been annihilated; that by voice the world becomes one neighborhood; that no matter what the size of his school, or where it is located, the great of all the earth who express personality and talent by sound may visit the pupil in his own classroom? So far as those influences that may be made effective through the voice are concerned,

26Ibid., p. 19.
the lid of the classroom has been blown off, and the walls have been set on the circumference of the globe. 27

Like its predecessors this experiment played its small part in furthering the forward march of educational broadcasting. There are certain contributions it made which are worthy of note:

1. The first training school for broadcasting and listening teachers was conducted.

2. The public was brought to an interest in and understanding of classroom methods and objectives.

3. Pupils were given the benefit of well organized and directed lessons planned by experts in their respective subjects.

4. The need for better preparation was shown, especially with regard to team work between the teacher at the microphone and the teacher in the classroom.

5. The supervisory and extra-mural function of radio was recognized.

6. The difficulties to be met were located and proved to be surmountable.

"Little Red Schoolhouse Programs"

The scene of activity now shifts to Chicago. In 1924 Radio Station WLS, began broadcasting what it called the "Little Red Schoolhouse Programs." These were broadcast under the direction of Mr. Benjamin H. Darrow, a member of the station staff. Talks were given from week to week on corn, dairying, birds, automobiles, the achievements of boys and

girls and other subjects. Separate programs were presented for high schools, rural schools, and grade schools. The assistance of leading educators was enlisted. Well versed men and women addressed the high school pupils. Art lessons, music, and geography were offered to the city grade school pupils whom, it was thought, might not be interested in the rural broadcasts. Experience proved that the city pupils were as interested in the rural school broadcasts as in their own. The "Little Red School House Programs" were undoubtedly a success. The known audience soon reached 27,000 school room listeners and an apparently large number of home listeners.28

The success of these programs led to an effort to interest the National Education Association in the possibilities of radio instruction. At a convention of the Association held in Indianapolis in June, 1925 a project was presented to the assembled teachers calling for the use of radio by the schools. A committee was appointed to work out a definite project between the school and radio stations. But in January, 1927, an inquiry addressed to the Association for information concerning the progress of the committee brought the reply that no work had been done on the project. There was an apparent distrust in the broadcasting agencies. It was feared that the schools might be made the recipients of insidious propaganda. Further, it was felt that radio would add increased burden to a curriculum already over-crowded.29

29Armstrong Perry, op. cit., pp. 51-52.
No educational body was willing to make the effort to finance radio in the schools. This fact led to the discontinuance of the "Little Red Schoolhouse Programs." Mr. Darrow was offered a position in another field. There was no member of the station staff willing or able to continue the broadcasts without sufficient funds to defray the necessary expenses. So, like the Oakland experiment, operations were discontinued. It was agreed that the experiment was a success as far as its central purpose was concerned but it had not attracted any group of educators or laymen sufficiently interested to finance the enterprise. 30

Some Unsuccessful Pioneer Experiments

In 1925, a few months after the "Little Red Schoolhouse Programs" were started, Kansas State Agricultural College began a series of broadcasts for rural schools under the direction of Mr. Samuel Pickard. This Kansas School of the Air broadcast inspirational, and educational programs to the schools at nine o'clock each morning. These were composed of opening exercises, music lessons, talks on birds, travel, biography, books to read and current events. Five minutes were given to an agricultural primer and there were discussions of poultry, crops, dairying and horticulture. 31

As only a small number of the 10,000 rural schools of the state were equipped with radio receivers when the programs started, Mr. Pickard develop-

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31Armstrong Perry, op. cit., pp. 51-52.
oped a plan to meet the situation. He organized a boys' club called "The Builders," whose purpose was to build radio sets for the rural schools. Before this latter project was well organized, Mr. Pickard accepted a government position and the programs were discontinued. This experiment was too ambitious at the low stage of development which radio had reached in 1925. It must be considered as an inconclusive experiment rather than a failure. It showed that the idea of educational broadcasts for schools was being considered by educators in various parts of the country.

During the year 1926 there were several pioneer efforts which met with varying degrees of success. One of the high schools of Buffalo, New York built and operated a broadcasting station. On February 5th the first program was broadcast from their own homemade transmitter. While the students and patrons were very enthusiastic about the venture, it was abandoned after a few months. The chief difficulty was the inadequacy of the equipment. 32

About the same time that Buffalo was making its unsuccessful attempt to utilize radio for educational purposes, Mr. A. B. Hill, the state superintendent of schools in Arkansas reported that radio was being used by the supervisor of vocational agricultural education to a great advantage. Many of the schools were equipped with radios and pupils and teachers could receive messages and directions from the supervisor simultaneously -- thus saving him time. 33 These two experiments were not intended to give real

33Ibid., p. 38.
instruction to classroom but they showed the manifold uses to which radio was being put by educators.

In Atlanta, Georgia a Public School of the Air was established in October, 1926. Mr. Willis A. Sutton, superintendent of schools in that city, became interested in the possibilities of radio after each school in the city had been presented with a radio receiving set by the manufacturers and local distributors of Atwater Kent radios. The radio lessons were planned for every grade from the kindergarten through the senior high school and a large amount of usefulness was reported for each. An executive committee composed of the superintendent, supervisors, principals and teachers prepared the programs in advance. These programs were published in the daily newspapers and gave the classroom teachers an opportunity to receive advance information concerning the radio lessons. 34

Mr. Sutton, in making his report to the Atlanta Board of Education on October 26, after one month's use of radio made the following statement:

The program, as carried out has been eminently successful. Every child in the Atlanta school system has had the opportunity to listen to at least one radio lesson every week. In addition, the radio is used for weekly faculty meetings of the entire teaching force. In this way the superintendent and supervisors can speak to every teacher without the difficulty and expense of assembling at some central point. The superintendent and supervisors talking thus to the whole force has a unifying power -- a solidarity to the entire system. 35

34 B. H. Darrow, _op. cit._, pp. 21-22.

These broadcasts were discontinued in 1928. The chief difficulty encountered was the fact that the batteries in the receiving sets were ruined by lack of care during the summer vacation. Furthermore, auditorium listening proved to be too difficult, bothersome and unsatisfactory. 36

Simultaneously with the Atlanta experiment, was the project launched by the State Department of Education of Connecticut. This was a course in music appreciation given over station WTIC. A committee of outstanding educators, under the direction of Dana S. Merriman outlined the lessons. Lesson leaflets were distributed and other preliminary work was done with such thoroughness that the audience at the first lesson numbered over 100,000 pupils in five states. The course, which cost $10,000, was considered a success by those who made it possible and by those who followed it. Some pupils in schools, not equipped with radio receivers, walked miles in order to receive the lessons in homes to which their classes had been invited. 37

In 1928 a different plan was tried, owing to difficulties that prevented a continuance of the course in music appreciation. The new program consisted mainly of lectures. Reports showed that the listening audience decreased nearly fifty per cent in numbers. Listeners were more interested in music and drama than in lectures, although the speakers possessed special ability in their respective fields and had mastered the

36 B. H. Darrow, op. cit., p. 21.
37 Armstrong Perry, op. cit., pp. 55-56.
special technique of radio broadcasting. No financial help was given for
continuing the venture and it was ended in the spring of 1928.

Summary of Results of Early Experiments

From the foregoing accounts it may be seen that the earlier experiments in classroom instruction by radio failed for certain obvious reasons:

1. They were premature.
2. No funds were available.
3. Mechanical equipment was inefficient.
4. There was a dearth of satisfactory programs for school use.
5. The promoter accepted another position.

On the other hand certain accomplishments must be noted:

1. Schools had listened in school hours to planned radio programs.
2. Some radio teachers had been splendidly successful.
3. It was shown that some subjects such as arithmetic or art, which educators said could not be adapted to radio teaching, really lent themselves to very successful treatment in radio lessons.
4. The experiments at the New York and Oakland high schools showed that it was possible to get reception so that a class of any reasonable size could hear every direction of the broadcasting instructor. They also showed that it was possible to plan lessons which would interest and keep active any number of classes who had been properly prepared for their reception and that such lessons would produce class and individual results commensurable with those gained by classroom teaching.
5. Educators were becoming "radio-minded." They understood
the difficulties involved and those who had experimented with the new movement were enthusiastic about its possibilities and undertook to convert those who maintained that formal education in the grades could not be accomplished by radio.

One interesting fact to be noted is that few of these early efforts were made with any knowledge of similar broadcasts having failed or being then in existence. "Each effort was a pioneering one -- blazing a lonesome trail." Like other trail blazers these pioneer experimenters met the difficulties, pointed them out and made it easier for those who were to follow in their footsteps.

38 B. H. Darrow, op. cit., p. 23.
CHAPTER III

LATER DEVELOPMENTS

The Cleveland School of the Air

While pioneer efforts in any field command our respect and admiration, it is more encouraging to consider successful efforts in that field. In radio education, the experiment which may be classified as the first successful school of the air was the one inaugurated by the Cleveland Public Schools. In 1925, through the cooperation of R. G. Jones, superintendent of schools, and Russell V. Morgan, director of music, a series of music appreciation lessons was organized by Miss Alice Keith. The lessons, which were planned for all grades from the primary through the senior high school, were broadcast weekly over station WTAM. The Cleveland Symphony Orchestra furnished the music for the upper grades and high schools. Other music programs were presented for primary and intermediate grades. Teachers were informed in advance of the nature of the programs, visual aids were suggested and classroom projects outlined. The Cleveland Plain Dealer published an illustrated article each Sunday describing the coming radio concert. A textbook, entitled Listening in on the Masters was pub-

1 Alice Keith, "Broadcasting Educational Programs over a National Network," Education on the Air, Columbus: Ohio State University, 1930. P. 223.
lished, and used by teachers in preparation for broadcast programs. This is believed to be the first textbook written especially for use with an instructional course conducted by radio. The results of the broadcasts were noted as excellent by the majority of teachers and observers. In 1928 Miss Keith accepted another position and the music appreciation broadcasts were discontinued. Unlike the other experiments recorded, the educational broadcasts were not permanently abandoned. After a very short interval another line of work was followed.

In October, 1929 Mr. Jones inaugurated an experiment in direct classroom instruction by radio. His object was to determine how well founded was his conviction that the most rare and highly expert teaching could be made available by radio. Most educators, at that time, agreed that radio could be used in disseminating informative material to schools but Mr. Jones held that this use did not necessarily prove that radio was an effective instrument of education. He felt that class instruction in arithmetic would be a critical test of the radio as a direct teaching device. Accordingly he set out to prove his contention. The lessons were carefully prepared by a specialist and were broadcast to second and third grade arithmetic classes twice each week for eighteen weeks. The

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2 Armstrong Perry, *op. cit.*, pp. 52-53.
3 H. M. Buckley, "Usefulness of School Broadcasts," *Education on the Air*, Columbus: Ohio State University, 1934, p. 80.
regular classroom teachers were present in each of the rooms and acted as observers and checkers of the work. Class work-sheets were sent to each pupil and directions were given by the radio teacher. The classroom teacher did not help during the broadcast. The lessons were scientifically graduated in difficulty. After a lesson was given and the results checked, new lessons were planned and the pupils reclassified according to their working rates. New work-sheets were written to restudy the problems that had offered difficulties.

At the end of the experiment, results were systematically measured. A test had been given before the radio lessons started and another at the end of the instruction. The tests were equal in difficulty and the results were comparable. The educational research bureau of the Cleveland Schools made the following summary of its findings:

The radio classes made unusual improvement in addition, the fundamental process taught by the radio lessons. The score on a test in mixed fundamentals -- addition, subtraction, multiplication, and division -- shows the 3B grade performance well up to the standard set by the authors of the test. However, most of the achievement was made through improvement in skill in addition. A conservative estimate would place the accomplishment in addition for the 3B grades at the standard set for the 6B classes.

The radio classes made more improvement than did classes of the same grade in the same district of the city, and in the city generally, which had not had radio instruction. A careful inspection of the results disclosed consistent improvement in the reasoning ability of these pupils. In general, the skills in addition designed to be taught by the radio lessons were actually well taught. This argues that, under like conditions, similar skills in other processes may be equally well taught.5

Inspired by these encouraging findings, the Cleveland Public School

5 Ibid., p. 57.
officials decided to make radio instruction a definite part of their educational program. Lessons have been added from year to year in music, social science, and art appreciation. Today Cleveland has one of the outstanding courses of instruction by radio in the country. It has had the whole-hearted support of the local school administration and the cooperation of radio stations WNK and WTAM. Plans for pupil participation in preparing manuscripts and broadcasting programs have been made for the school year 1937-1938. The Rockefeller foundation is financing the building and maintenance of a school operated radio station. The programs will operate on short wave lengths and will be sent direct to the Cleveland Public Schools.\(^6\)

Radio in Chicago

It will be recalled that Chicago was forced to abandon the "Little Red Schoolhouse Programs" in 1925 when no financial help was forthcoming for their continuance. In the fall of 1926, the Chicago school system resumed educational broadcasts under the able direction of Miss Judith Waller, the vice president and general manager of station WMAW. This station had been sponsoring a series of courses in philosophy, literature and foreign languages broadcast direct from the University of Chicago. Coincident with these developments, which had no definite connection with public school education, Miss Waller developed a feeling that educational broadcasting could find a definite place in the curricula of the public

and parochial schools. The first obstacle was the lack of equipment. Boards of education were reluctant to install radio in the schools until they could be convinced that the radio stations had worth while programs to offer and radio stations did not want to build school programs until the schools were equipped to receive them. Just when Miss Waller's venture seemed doomed to failure, it was announced that a radio set had been presented to the Goudy School by the Parent-Teacher Association. Miss Waller felt that this was an opening and immediately took advantage of it.

Arrangements were made for broadcasting occasional lessons that would fit into the Chicago course of study. At the end of the school year 1927, it was found that about a dozen schools had obtained home type radio sets and were listening to these programs. From that small beginning, with the demonstration that something of importance had been accomplished and with the feeling that some subjects could be presented to school children in such a way as to give real help to the classroom teacher, it was planned to stabilize the program from a rather erratic schedule of three half-hour programs a week to a definite one of five days a week with two features each day. Lesson suggestions were issued regularly to teachers using the broadcasts. Gradually the public school radio program assumed such proportions that Miss Waller could no longer keep it under her personal direction, with the result that supervision of the public school broad-

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7 G. P. Drueck, "Broadcasting Education to Pupils of Chicago and the Midwest," *Nation's Schools*, VI (December, 1930), pp. 49-54.
casts were given over to a station staff member, under whose direction they continued until the end of the school year 1929-1930. It must be noted that up to this date the public school course had been under the supervision of the radio station with rather indifferent consent of the school administrators. But the evidences of appreciation that poured into the superintendent's office were of such consequence that the growing potency of the radio lessons could no longer be ignored. This led to one of the most significant developments in the cause of classroom instructional broadcasts -- the taking over in 1930 by the Chicago public school system of the entire course of instructional programs of station WMAQ. This sponsorship is still in effect and today Chicago has perhaps the most extensive local program in the country.

The school broadcast period is from 1:30 to 2:00 P.M. each school day. During each half-hour, two fifteen minute lessons are given. Programs, prepared by the educational staff, are so arranged that some material is provided for pupils in all grades from the first to the ninth inclusive. The subjects, for which supplementary material is given, include music, social studies, geography, history, household science, science, stories in mathematics, poetry, art, guidance, current events, character inspiration, health, book club, prominent citizen series, and primary story hour. Credit must be given to station WMAQ for the success of the Chicago experiment. Although the station is commercially owned, the officials have generously donated time and have paid for the distribution of lesson bulletins without demanding any time for advertising or exerting any
censorship over the programs.

Standard Oil School Broadcast

Any school program which is commercially sponsored is looked upon with disfavor by educational leaders but the Standard Oil School Broadcast is a noteworthy exception. The success of an initial venture into the broadcasting of symphony concerts led the Standard Oil Company of California to establish, October 23, 1927, the Standard Oil Symphony Hour -- a series of year-round weekly radio symphony concerts by leading symphonic organizations of the Pacific west. Subsequently, on October 18, 1928, was born a unique and ambitious radio educational project, comprising the closely affiliated programs of the newly inaugurated Standard Oil School Broadcast and the Symphony Hour. Fine music was the foundation on which the Standard radio educational venture was built. This project has been carried on continuously since its inception. A teacher's manual, containing an outline of lessons and other necessary information, is published free by the Oil Company. Though primarily a music appreciation course, the Standard School Broadcast is striking out into new educational fields. It is developing the broader outlook of the educational trend toward "fusing" of various subjects of the school curriculum as integral parts of a unified experience. Musical scrapbooks of artistic and informative value are compiled; musical compositions are

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9 Ibid., p. 157.
dramatized; dances are learned and performed; music maps of the birth-
places of composers tie the study of the social science to that of music;
English compositions are written, with music as their subject; puppets are
made and shows given to illustrate the stories told in descriptive music
and even elementary mathematics is done in terms of music. 10

The Turning Point in Radio Education

The year 1928 seems to have been the turning point in the history of
radio reception as well as radio education in the United States. In that
year the first all electric receivers were put on the market. In that
same year the first nation-wide programs were presented to the public
schools of the country. The Radio Corporation of America announced in
the spring of that momentous year that Walter Damrosch, director of the
New York Symphony Orchestra, would broadcast a series of concerts with
talks on music appreciation and comprehensive discussions on orchestral
instruments. With this superlative attraction, with a chain of stations
covering the country, and with wide publicity in the newspapers, the
Radio Corporation of America launched its national experiment over the
National Broadcasting Company and associated stations. 11 The authority
which gave courage to this ambitious project was the report of the Pre-
liminary Committee on Educational Broadcasting. This committee, financed
by The Payne Fund, made a nation-wide radio survey. This survey appears
to have been the crisis in the career of classroom use of radio. It

10 Ibid., p. 161.
11 Armstrong Perry, op. cit., p. 56.
proved conclusively that a national system of radio instruction was practicable. The public schools had opened their front doors and allowed radio to enter and take a legitimate and honored place in the halls of the elect.

From that time instructional courses by radio sprang up everywhere. It is impossible to report all of these programs. Only those which are the most interesting or which have made some significant contribution to the cause of radio instruction will be described. Because the Ohio School of the Air rendered such valuable service to teachers in the middle west it must be given consideration.

Ohio School of the Air

To the Ohio State legislature must be credited the honor of being the first body of its kind to provide, through public appropriation, for a school of the air under the direction of the educational authorities. In the years to come this pioneer step is sure to assume increasing significance. Already it has brought Ohio to the attention of the entire educational world.

The planning for the educational broadcasts was started on October 6, 1928, by the Ohio State University and the first program was presented January 7, 1929. The audience which heard that first program little realized it heard a new act in the ever changing drama of education destined to be put on the air every school day of the year. Though other

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experiments in air schools had been tried, this Ohio School of the Air was to rise to significant heights as a factor in education.

This experiment was beset by difficulties from the very beginning. The first thing that happened was the bankruptcy of the broadcasting station which had been chosen to carry the broadcasts. This left two courses open. Either they could content themselves with using the University's station WEAQ and serving only central Ohio or they could link three or more Ohio stations by telephone and reach the entire state of Ohio. This latter plan would have meant the expenditure of a large sum of money which they did not have. A station at Cleveland was willing to carry the broadcasting free but was unable to finance the telephone-line charges. Fortunately, for the success of the venture, the powerful Crosley station WLW offered to do all broadcasting without charge and the funds for telephone connections between WLW and WEAQ were furnished by private contributions.

With broadcasting facilities provided, the directors were confronted with other problems -- the planning of the course, the securing of broadcast teachers and determining whether the size of the listening audience would warrant the trouble and expense involved. By means of a questionnaire it was found what school subjects were most desired. However, many schools reported that, as they had no assurance that the proposed School of the Air was to continue beyond the experimental period, they did not care to equip with receiving sets but the questionnaire replies showed

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13 Ibid., pp. 193-194.
that there would be enough listeners to make the effort successful.

Eight days after the Ohio School of the Air began broadcasting, the Governor of Ohio was inaugurated. The inauguration was broadcast to the schools and, of course, there were many home listeners. This broadcast was followed by a series on "Civil Government by Those Who Govern" and the Governor, Lieutenant Governor, other elective officials, and all the chief appointive officers were asked to tell the children, in simple language, what they did for their state in the office which they represented. Sessions of the Ohio Senate and House of Representatives were also broadcast. In each case, the legislative body conducted the entire period so that it would further legislation and be as intelligible as possible to both pupils and legislators. ¹⁴

Mr. Clifton director of the Ohio State Department of Education reports how the sponsors of the School of the Air were able to secure financial support from the Ohio State Legislature. This is what he says:

> When the time came to present our request for funds, we gave our Legislature a concise statement of the money that was wanted and the purposes for which it would be used. We should have asked for more than $40,000 for the two-year period, but we were a bit short on courage. We had an unusual claim in that we could assure the lawmakers that if they would put in $20,000 a year Ohio State University would contribute $10,000 per year in the use of its facilities. The broadcasting talent through free, or largely free, services contributed another $10,000, and the Crosley station WLW, gave the lion's share in the use of their time which could easily be sold for more than $60,000. In other words, we told the Legislature that if it would give $20,000 we would do a $100,000 job. There was not a single dissenting voice. . . . the experiment was granted at least two years more of life. . . . We then had funds to pay

¹⁴Ibid., pp. 195-196.
a limited staff and stenographers, to rent telephone circuits from Columbus to Cincinnati, . . . to issue lesson leaflets for distribution to teachers, and to pay traveling expenses and small fees to broadcasting teachers who gave freely of their time every week.15

In September, 1929 the second period of the School of the Air began and it soon had an audience of 200,000 school children. Home listeners became interested. Parents of children attending schools not equipped with receiving sets were convinced that their children were being deprived of a valuable opportunity and more and more schools began to install equipment to receive the broadcasts. Public opinion had enlisted in the forward march. In some cases school men availed themselves of radio without being urged to do so by patrons. In other cases the initiative was taken by school board members. Very few communities discouraged the equipping of schools. All types of equipment were represented but a great step forward had been taken.

The first two-year appropriation for the Ohio School of the Air ended January 1, 1931. This was at a time when school budgets were being reduced to a minimum. Although the School of the Air was the youngest department, the lawmakers were so convinced of its unusual merit that they permitted it to continue with a severely limited budget -- it being allowed but $25,000 for a two year period. This curtailment called for a change of policy. Private contributions were solicited, some changes were made in the selection of broadcasting talent, the lesson leaflets were sold instead of being donated, and last of all the Crosley Radio

15 Ibid., p. 196.
Corporation gave increased services of its announcing, dramatic and music staff and broadcasting went on as usual.

In 1933, the appropriation was increased and the Ohio State Legislature continued to finance the venture until the fall of 1937. At that time the Ohio State Government began stringent economic measures and refused to support the Ohio School of the Air. Mr. Benjamin H. Darrow, director of the school, resigned and this most successful radio venture seemed doomed. At a time when the situation seemed hopeless, Mr. Powell Crosley, owner of radio station WLW, came to the rescue. He offered the facilities of his station and the school officials of Cincinnati promised their cooperation. The radio school continued under a new name — The Nation’s School of the Air.

The course of instruction has been planned to meet the curricula needs of the schools of Ohio, Indiana and Kentucky. This radio course counts its listeners by the millions and is used by schools in thirty states and many Canadian provinces. The project is enjoying the success bequeathed to it by its predecessor, the Ohio School of the Air, which represented the most successful undertaking of its kind in the United States.

The American School of the Air

One year after the launching of the Ohio School of the Air project, the American School of the Air began operations. In 1929 the Columbia Broadcasting System offered the use of its facilities to any group of educators who could bring a well prepared series of lessons to its microphones. No group responded because funds for such an undertaking were
not available. The Grigsby-Grunow Company, manufacturers of radio sets, agreed to sponsor a number of educational broadcasts to be known as the American School of the Air. The venture was approved by the secretary of the Department of the Interior and by the Commissioner of Education of the United States. The initial program was presented on February 4, 1930 and continued for fifteen weeks. The programs were broadcast for one half hour each Tuesday and Thursday. These programs were planned under the guidance of a committee of specialists, each well versed in his own particular subject. Dr. William C. Bagley of Columbia University was Chairman.

At the end of the first year the sponsor withdrew his support and the Columbia Broadcasting Company assumed responsibility for the project and have continued to sponsor it to the present day. It has a large following in the midwest. Its activities do not interfere in any way with those of the Nation's School of the Air. Their time schedules do not conflict. The American School's programs are planned chiefly for upper grades and junior and senior high schools, while the Nation's School programs are planned for intermediate and primary grades. The one unique contribution it has made to the cause of radio education is its use of short wave broadcasts. In December, 1936 two broadcasts were presented direct from the Peace Conference at Buenos Aires.

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In 1937 the American School of the Air added to its series two interesting features. One entitled "Exits and Entrances," a current events program is unique because it is the first program directly sponsored by the National Education Association. The other, called "Human Relations Forum," is under the direction of the Progressive Education Association. The purpose of this series is to bring to high school students some knowledge of the social and economic problems of the day and to enable them to see these problems clearly and think through more adequate ways for successful human relationships. The American School of the Air is, perhaps, the best answer to those educators who decry commercial sponsorship of school programs. The programs are well planned under the expert guidance of leading authorities in their respective field. A beautiful teacher's manual and classroom guide is distributed free, at considerable expense, by the Columbia Broadcasting Company.

Radio in Wisconsin

With the exception of the Ohio School of the Air, the experiments described in this chapter used the facilities of the commercially owned stations exclusively for their programs. The growth in the number of educationally-owned stations has been very slow in the United States. This is due to the great expense involved but it is interesting to note that WHA at the University of Wisconsin is the world's oldest educational radio station. Its first telephonic broadcast was on the air in 1917, years before there were any commercial broadcasters, and regular broadcasts
had been scheduled by 1919.\textsuperscript{17} WHA also enjoys the distinction of being the first station to carry on object research work to measure the effectiveness of the radio in providing supplementary programs for schools.

After conferences with members of the State Department of Education and the county superintendent, the Wisconsin experiment was arranged by the Radio Research Committee of the University of Wisconsin. It was decided to measure the effectiveness of the radio in teaching current events and music to students in the sixth, seventh and eighth grades in twenty-five schools of Dane County, Wisconsin. The experimental schools were chosen by the county superintendent and provided a cross section of the group represented. A group of twenty-five control schools, as nearly like the experimental schools as possible, was also chosen. The experiment began March 17, 1930. The music lessons were broadcast for twenty minutes twice a week and the lessons in current events were broadcast for fifteen minutes on the other three school days.

Students in both experimental and control groups were provided with the same study materials. The magazine \textit{Current Events} was used as a basis for the current events lessons. Students in the control schools studied and recited on the materials in the magazine, spending the same amount of time as was devoted to the radio lessons. The teachers were urged not to spend extra time nor to do any extra coaching. Teachers

\textsuperscript{17}News Item in \textit{Education by Radio}, IV (April 12, 1934), P. 12.

in the radio schools were instructed not to drill the students on the information given in the radio lessons. The broadcasts were intended to supplement the information contained in Current Events. Speakers referred frequently to the magazine articles in their talks.

Two examinations consisting of one hundred statements to be marked true or false were given at the end of four and a half weeks and at the end of the experiment respectively. Fifty of these statements were taken from the magazine and the other fifty from the radio broadcasts. The papers were marked and the scores made by the two groups were compared.

The results of the first examinations were interesting. First, a comparison of the scores made by the two groups on the fifty questions taken from the Current Events magazine gave a critical ratio of .331 in favor of the non-radio group; second, a comparison of the total scores made on the questions taken from the supplementary material given in the radio broadcasts gave a critical ratio of 2.71 in favor of the radio group and third, a comparison of total scores made on the examination gave a critical ratio of 2.47 in their favor.

From the results of the second examination a comparison of scores made on the fifty questions based on the magazine gave a critical ratio of 2.11 in favor of the group using radio; a comparison of scores made on the fifty questions taken from the radio supplementary material gave a critical ratio of 3.22 in favor of the radio group and a comparison of the total scores gave a critical ratio of 2.14 in favor of this group.19

Mr. Ewbank in commenting on the results made the following remarks:

On the basis of these results we can conclude that the radio lessons taught from the material contained in the Current Events were somewhat better than when taught by the teachers without the aid of the radio. The slight advantage which the control schools seemed to have in the first test may have been caused by the fact that the students were unaccustomed to listen critically to the radio when they began these lessons. . . . The critical ratios, . . . while not large enough to indicate certainty, show a considerable advantage for the radio lessons over any sources of supplementary materials that the students in the control groups may have had.20

The experiment in music was conducted on a basis slightly different from that of current events. Since there was no way of giving the music lessons in the control schools, a different method of measuring results had to be used. Standardized music tests were given at the beginning and repeated at the end of the experiment to both groups, but schools in the control group did not have uniform music instruction during the course of the experiment. Some schools had little or no instruction; others had a music teacher who came in occasionally. Each music lesson broadcast consisted of four parts; information about music, musical instruments, composers and the like; some music played without any comment so that it might be enjoyed for its own sake; rhythm exercises in which the listeners participated and the teaching of singing. A comparison of scores made by the same students at the end of the experiment showed the following critical ratios in favor of progress as a result of the radio course:21


21"Results of Experiment in Wisconsin," op. cit., p. 573.
Grade VI ........... 11.17
Grade VII ............ 9.08
Grade VIII ........... 11.14

A comparison of scores made by the experimental group at the end of the course with those made by the control group at the end of the course showed the following critical ratios in favor of the former. 22

Grade VI ........... 10.05
Grade VII ............ 7.03
Grade VIII ........... 6.16

The experiment in music did not show as conclusively as the experiment in current events the effectiveness of radio instruction. It showed, however, that music taught by radio was more effective than the methods used in the control schools. The Radio Research Committee reported that "radio could be used to teach subjects when no qualified teacher is available in the classroom, and that its greatest use is to supplement the efforts of the classroom teacher." 23 As a result of this experiment station WHA began a course of instruction for the pupils of Madison.

In 1932 WHA and WLBL, the station of the Department of Agriculture and Markets at Stevens Point, were connected with wire lines and the present school programs are broadcast by both stations simultaneously. Each station retains its identity and not all of the same commercial programs

22 Ibid., p. 573.
are heard over both stations. By uniting forces, however, they are able to broadcast educational programs to all the school children of Wisconsin and surrounding states.24

The most interesting feature is their series on Creative Art. As far as could be ascertained, it is the only one of its kind in the country. During the fifteen minute broadcasting period the teacher at the microphone discusses some interesting topic, such as the circus, and plays appropriate music to stimulate the imagination of the listening audience. The broadcasting period is followed by a drawing period, during which time students criticize their own and each others' work from suggestions given to them during the broadcast period. These paintings and drawings are collected by the classroom teacher and mailed to the broadcasting station, where the best ones are selected and mounted for exhibits. The exhibits are then routed back to the various schools on a regular circuit.25

Mr. Claxton, the author of the programs, explains the exhibit feature of the broadcast by saying that it serves several purposes: it gives the radio station an opportunity of knowing the number of students participating in the lessons; it serves as a check on the success or failure of the radio lesson; it affords an opportunity of analyzing students' artistic needs, compositional strengths and weaknesses and it supplies, in part

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at least, the necessary visual side of such instruction, helping to point out to the child successful attempts that have been made by other children. In pointing out the aim of the series he concludes by saying:

We are primarily interested in the child’s expression. Fundamentals of composition and art structure come as natural development of the expressive power of the child. . . . We are attempting to keep alive the artistic imagination of the child, to make him conscious of the dramatic in his own life, and to make him feel the relationship between himself and the art of his environment.26

North Carolina School of the Air

The southern part of our country has not been left behind by the forward progress of education by radio. In 1925 the governor of North Carolina made it known that he was very much in favor of using the radio for disseminating information about the state to rural communities through the school houses in these communities. This announcement caused much comment because of the novelty of the idea. His plan was to build a state-owned broadcasting station, probably at the State College, and to encourage the placing of receiving sets in every school house where the community could gather and listen to broadcasts about the state government. This plan was not carried out but the idea of using the radio for educational purposes was implanted in the minds of the people of the state but nothing definite was done until six years later. The opportunity to do real constructive work in classroom instruction came when the director of the Raleigh radio station WPTF invited the North Carolina State Department of Public Instruction to make use of its broadcasting

26 Ibid., p. 128.
facilities.

The first public school broadcasts began in the spring of 1931. The first reports were very encouraging and it was decided to experiment further with the radio school. The educational broadcasts were experimental and served to try out some new or, at least, different method of procedure, and to test out certain types of content materials. A few of the important questions considered and the subsequent findings were:

1. The length of the broadcasts -- they should be not longer than twenty minutes.

2. The school subjects most adaptable to supplementary treatment -- social studies, science, English including literature, fine and industrial arts and music.

3. The methods of presentation -- these should be in line with those followed in the classroom, although the methods used by the broadcaster may improve existing classroom procedure in some cases.

4. The timeliness of the topics -- special topics and special phases of a school subject should be presented in conjunction with the established school program.

5. The sequence of subjects or topics -- it was found best to have the broadcasts on a particular subject follow in regular sequence rather than once a week or once every two weeks.

6. The scope and range of content material -- intensive treatment of one topic was found to be more helpful in the classroom than presenting a wide range of informational material about a subject.
7. The grades in school to receive the broadcasts -- provision for the various age groups was decided to be essential, and special attention should be given to the needs of the specific grades in preparing the courses to be offered in the radio school.27

The educators of North Carolina are very enthusiastic about their radio school. The faculty members are interested in the program. They willingly give much time and effort to the preparation of the broadcasts. Parent-Teacher Associations have become interested through hearing the broadcasts in the home and are aiding in the work of equipping the schools with radio facilities. Letters of appreciation from parents, superintendents, music teachers, school principals, teachers and pupils are evidence of a growing interest.

This is only a very few of the schools using radio as an educational device. The movement is growing rapidly. More and more schools are being equipped with receiving sets. More and more educational systems are inaugurating local schools of the air. The activities of the Indianapolis public schools will be reported in a separate chapter.

Radio Committees

Before closing the chapter mention must be made of two important Committees which are functioning successfully. The National Committee on Education by Radio and The National Advisory Council on Education by Radio.

The National Committee on Education by Radio was organized on December 30, 1930 as a result of a series of conferences which took place during 1930 and which indicated the clear need for a more active interest in radio on the part of educational workers. The purpose of the Committee is to secure to the people of the United States the use of radio for educational purposes by protecting the rights of educational broadcasting, by promoting and co-ordinating experiment in the use of radio in school and adult education, by maintaining a Service Bureau to assist educational stations in securing licenses and in other technical procedure, by exchange of information through a weekly bulletin, by encouragement of research in education by radio, and by serving as a clearing house for research. The nine members serve without pay and the activities of the Committee are financed by the Payne Fund.

The National Advisory Council on Education by Radio, was organized in 1930 to further the art of radio broadcasting in American education. At the present stage of its history it is attempting to do two things: to assemble and disseminate facts about radio in education and to induce qualified educators and authorities in various fields to devise radio programs that will be notable contributions to educational broadcasting. The work of the National Council is financed by the Carnegie Fund and the Rockefeller Foundation. Annual meetings are called which constitute a

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28 This statement is included in the preface published with the first bulletin of the committee. Education by Radio, I (February 12, 1931).

public forum on radio problems and the reports of the meetings are published in a yearbook entitled Radio and Education.

In addition to the activities of these two committees, there is held at the Ohio State University each year an Institute for Education by Radio. The first series of meetings was held in June, 1936 and was attended by men and women from all parts of the United States, from England, Canada, Mexico and Ireland. This Institute publishes a yearbook entitled Education on the Air which contains the addresses and proceedings of its annual meeting.

Other educational groups are seriously considering radio education. The First National Conference on Education was held in Washington, D. C., December, 1936. The conference was sponsored by eighteen national organizations in cooperation with the U. S. Office of Education and the Federal Communications Commission. At the annual convention of the National Education Association held in Detroit, June, 1937, the subject of radio education was the basis for many discussions. A committee was formed to determine the advisability of forming a new organization to promote the use and study of the radio as an educative device. This organization would be a subsidiary of the association and would consist of a committee made up of a chairman and forty-eight members, one appointed from each state. The representative from each state would be expected to head a state committee, created from within the membership of his state association. Approval of the plan has come from twenty-seven states and in all

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probability the plans will be completed at the 1938 meeting of the Association.

The steady progress made by educational broadcasting would seem to establish the fact that radio education is successfully passing through the first period of its history. There is much to be done, many problems to be solved but, undoubtedly, radio teaching has entered the schools to stay. It may be that the schools want from radio more than they have any right to expect and more than they have any possibility of getting. That radio has a place in the educational structure is widely agreed but what that place is, is a disputed question for which only the future holds a satisfactory answer.
CHAPTER IV

HISTORY OF RADIO EDUCATION IN INDIANAPOLIS

In comparison with developments in other cities, radio education in Indianapolis is still in the pioneer stage. Although the use of radio in the classroom is very recent, the Indianapolis schools have been using radio for publicity purposes since 1922. In the hope that at some future date, students of radio education may find the information helpful, the history of radio in Indianapolis is included in this thesis. The material is used with the permission of Miss Blanche Young, Assistant Director of the Department of Publications for the Indianapolis Public Schools.

First Educational Uses of Radio

The first broadcast by the Indianapolis Public Schools was presented during American Education Week of 1922. During the school year 1922-1923 a half hour program, consisting of music and talks about foreign countries, was presented once a week. No more programs were broadcast until the fall of 1931. In that year the newly organized department of publications sponsored a regular half hour series of music and talks. In January, 1932 a new series called "The School Ship of the Air" was added. These programs, fifteen minutes in length, were presented each Monday, Wednesday and Friday morning for shut-in children. On this imaginary radio school ship of
the air, children who were radio listeners, enrolled as sailors by writing a letter. The imaginary ship "sailed" to many interesting spots in the United States, visiting places of historic and literary interest.

Programs for Publicity

In June, 1932, when budgets were being curtailed, the department of publications was abolished and was not re-established until February, 1935. Since that time, the entire time of the assistant director of the department has been given to the writing and production of radio programs. From the very beginning, the general objective in using the radio has been to keep the public informed about what the schools are doing in the most interesting way possible. From March to June, 1935, three series of weekly fifteen minute programs were presented.

The Three R's Sketch dramatized episodes in the life of a mythical family known as Mr. and Mrs. Rayburn and their three children of school age. Through family situations, it presented some of the needs and activities of the schools, at the same time showing family problems in which the schools were involved.

The Three C's Program, (Community, Citizenship and Culture) was presented by groups closely allied with the schools.

The News cast presented highlights of news and human interest stories from the city's ninety-three schools and was broadcast by high school students.

With few exceptions, the scripts for these programs were written by Miss Young and were broadcast by teachers and students. One exception
was the Three C's program which enlisted the services of members of civic organizations for some of the scripts.

From October, 1935 to June, 1936, the schedule of three weekly fifteen minute broadcasts was continued. These were heard each Tuesday, Wednesday and Thursday at 5:15 from station WFBM. The first two were listed as "School Sketches." The third was the "Newscast" presented in the same manner as the previous year. The "School Sketches" attempted to do three things: present programs to fit the junior high school curriculum in social studies, give information of interest to the general public and indirectly, to tell the public what the schools were doing. Many programs were produced as the outgrowth of work in certain classes and sometimes materials from culminating activities growing out of the classroom work in social studies were re-written for the radio. One series of the "School Sketches" presented programs of interest to junior high school students in social studies classes. Topics were selected which fitted the school curriculum and teachers assigned these programs as part of the homework for students in these classes. Citizens who were specialists in certain fields were interviewed. The weather-man, post-master, superintendent of the airport, travelers and natives from foreign countries, state conservation fieldman, the state historical librarian, and others brought first hand information to public schools as well as to the general radio listening audience. A survey made of this series at the end of the year showed that, even though the programs were well presented and served the purpose for which they were
intended, they were not so successful as they would have been if they had been broadcast during school hours to students in the classrooms. In a great many cases, teachers were unable to hear the program because of work which kept them at school and much of the value of the broadcast as a part of the school program was lost for this reason.

During the school year 1935-1936, assistance in writing scripts was given by many teachers, and it was hoped that eventually a definite staff of teachers interested in radio script writing might be developed. More than 900 teachers, students and citizens took part in the broadcasts during this school year. In most cases rehearsals were held at the schools except for the hour or two at the studio before the broadcast. Auditions at the studio after school hours or on Saturdays were held whenever necessary, and since there was a different cast for almost every program, this required considerable time.

One of the most successful series of programs to interpret the schools to the public was presented by a committee in the special education department. By dramatizations, dialogues, music and sound effects, four phases of special education, namely, hearing-testing classes, special classes for mentally retarded children, sight conservation classes, and physically unfit children from fresh air classes, hospital classes and schools for crippled children were described.

During this same school year, 1935-1936, each of the six high schools presented two programs during the year, dramatizing events of importance to each school, student council activities, musical organizations or sketches of senior plays. Assistance in planning these programs,
editing the scripts, auditions, rehearsals and direction of the program on the air was given by the assistant director of the department of publications. Another service was inaugurated during the year. A monthly radio bulletin was sent out to each school listing programs of schools of the air, American and Ohio, the Damrosch musical broadcasts and the Indianapolis Public Schools programs. By the first of June, 1936, forty-eight schools were equipped with at least one radio, many had two or more sets and there were three schools equipped with public address systems.

First Classroom Use of Radio

During the month of May, 1936, a series of programs planned to fit the curriculum were broadcast during school hours as test programs to determine the advisability of planning school programs for the following year. These were heard at assembly time, 10:15 A.M., and consisted of a talk about birds delivered by a specialist in the study of birds and natural science, a story about Mexico today, a dramatization presenting interesting information about the industrial section of Indianapolis and a vacation safety program. These programs did two things, they enlisted the interest of elementary teachers in the radio as an instructional tool, and proved to those who had already used the programs of the Ohio School of the Air and the American School of the Air, that radio programs planned to fit the local school curriculum were much more valuable and useful than others which did not fit the curriculum.

There has never been any definite measurement of the value of programs of a publicity nature. The Indianapolis School officials are confident that such programs have done much to build goodwill for the public
schools. There is a greater satisfaction, however, in being able to do two things with the program, to build goodwill because of its publicity value and measure its definite results, by using it in the classroom.

It has been determined that there are 10,000 potential listeners for the programs planned to fit the curriculum in the junior high school social studies classes. In the Indianapolis School System, there is a potential audience of 10,000 for other group levels, grades five and six, grades three and four, and the primary grades. The actual number of listeners is not this large, of course, but even though more than half of the schools had radio equipment in June, 1936, it is known that a great many other schools brought in radios from the outside to be used on the day of the broadcast. There is not sufficient clerical help at the school office to answer fan mail, and none is solicited, nor are there facilities for sending out free material which would make for a more accurate measurement of the listening audience. During the school year 1935-1936, it was estimated that approximately 950 persons, including 709 students, 167 teachers, principals and supervisors, and 29 other citizens, took part in the public schools programs.

Beginning in October, 1936, and continuing until May, 1937, three weekly programs by the Indianapolis Public Schools were presented during school hours. Two of these were planned for use as supplementary enrichment material for students in the fifth and sixth grades. One program a week, heard at 5:30, continued to interpret the schools to the public by means of music, talks, interviews and dramatizations. An outline of each school program presented, follows:
Music Programs

The Music Department presented each week a program of "Music of Foreign Lands," for fifth and sixth grade pupils, following the outline of work in social studies. This program was broadcast by Mr. Ralph Wright, director of the Music Department. His accompanist and script writer was Mrs. Lenora Coffin, also of the Music Department. Instruction sheets were sent to the schools outlining class preparation for the broadcasts and offering suggestions for follow-up work. This class preparation, in most cases, consisted of learning songs, studying instruments, facts about the composers and musicians representative of the foreign country being discussed. Pictures of the musical instruments of the countries studied were included with these instruction sheets. During the broadcast, the children in the classroom sang with Mr. Wright as he directed them on the air. Victrola records were used to demonstrate to the children the sound of these foreign instruments playing their respective native music. In some programs, persons from foreign countries were interviewed by Mr. Wright. A Chinese boy sang a song in his native language and a missionary from India sang a song in Hindustan. All of this added variety and interest to the programs. Pupils wrote letters giving their reactions to the programs, sometimes answering questions asked. Drawings were made of impressions received, and copies of instruments made of crude materials were part of displays and exhibits in some schools. Many letters and drawings were received at the office of the Music Department.

In a bound copy of the program scripts, Mr. Wright has written a
short review of the series. He says, in part:

To prepare the bulletins and script for one fifteen minute broad-
cast requires more than two and in some cases three days. This work
requires a very experienced person who has available a large library and
an unusual fund of material and procedures for teaching. In my opinion,
radio broadcasting in the schools has unlimited possibilities. We have
made a successful beginning, if reactions from principals, teachers and
pupils are a just indication. This work can continue and develop, pro-
viding we have enough time for preparing the necessary bulletins and
script.

Art Programs

Alternating every other week with the "Music in Foreign Lands
Broadcasts" was the art program called, the first semester, "Puzzles in
Art" and the second semester, "Art Adventures." For this program, sheets
of instructions and designs made by the Art Department were sent out to
schools preceding the broadcasts, and in most cases, these sheets were
used for activity work during the broadcast and for follow-up work.
The broadcast was presented in the form of an interview between Miss June
Woodworth of the Art Department, and a high school boy. These lessons
were unique, in that they furnished the individual teacher with design
material which she would be unable to assemble in her regular work. The
school listening audiences on this program grew so fast after the first
broadcast that, by the end of the first semester, the Art Department
found it necessary to send out 8,000 sheets of designs for students to
use during the radio programs. The question of the cost of supplying
these mimeographed sheets became a problem of some concern since the
supply budget was not planned to include such extensive material. However,
it was decided that, in the long run, the one sheet used by the student
before, during and after the broadcast for this one art lesson, probably saved the schools an equal amount of paper, because in ordinary art lessons, one or two extra pieces of paper are often used.

After using these programs one semester, it was found that the assignment given for the class preparation before the broadcast and for follow-up work after the broadcast was too extensive to be accomplished in a two week's period. For the second semester, the art programs were planned to be heard only once a month, thus giving more time for the teacher and students. The time required for writing the radio script, the bulletins of instruction to be sent out to the schools, and the drawings on the art charts required so much time that this, in itself, almost became a burden. The first drafts of these scripts were written by Miss Belle C. Soofield or Miss Marie Stewart of the Art Department and edited for radio presentation by Miss Young.

Birds and Natural Science

Two other programs were presented to alternate with each other on Wednesdays at 2:15 over station WIRE. The first one was a talk by Mr. Sidney Esten, whose bird programs had received the most favorable comments during the test series in May, 1936. Students, teachers and the listening public, had an opportunity to send in questions about birds and other nature subjects which Mr. Esten used as part of the material for the series. Many of the programs included stories of Mr. Esten's own personal experiences. Since Mr. Esten had been heard as a lecturer in a great many schools of the city while he was a member of the State Conservation Department, he
was well known as an interesting speaker, and his broadcasts continued to reach a large audience. This was the only program on which preliminary preparation and follow-up material were not sent out to schools, because Mr. Esten's talks did not directly coincide with the school curriculum in any one grade. They were heard by students from the third grade through junior high school, and for this reason there was no definite measurement of the listening audience. While considered interesting, it was apparent that teachers did not believe this program as important as the others because of the lack of instruction material.

Library Programs

Alternating with the Birds and Natural Science programs was the one prepared by the librarians of the Children's Department of the Public Library called, "Books to Grow on." In this series a great number of librarians and students were used in the broadcasts. The scripts were written primarily by the library staff and contained book reviews, dramatizations and interesting short stories taken from books. Book lists were sent to the schools preceding the broadcasts, in order that students might secure the books reviewed from the branch libraries. The library program did much to increase interest in reading. Many of the programs were planned for junior high school audiences, but because of the time of the broadcast and the already crowded junior high school curriculum, they were not heard by so large an audience as the ones planned for fifth and sixth grade students. These programs, however, proved their value and were continued the second semester under the title "Treasures in Books."
Primary Programs

Since the art program was heard only once a month during the second semester, there was a time allotment to be filled by some other broadcast. A primary program had been requested by many teachers because of the unsatisfactory quality of other such programs presented by schools of the air. There were also, in the radio files, the names of two primary teachers who were interested in broadcasting, and who had had previous radio experience on public school programs. The services of these teachers, Miss Josephine O'Brien of Public School 45 and Miss Dorothy Bowen of Public School 33 were enlisted. The program developed was one of songs and stories planned to fit the primary curriculum and was called, "Tunes and Tales." This program had a large audience from the very beginning. It was particularly valuable for teaching children of the primary grades the valuable habit of attentive listening. Some attempt was made to incorporate a certain amount of activity on the part of the pupils during the broadcast. The children learned little songs to sing with the radio teacher, and certain rhythmical suggestions were made by which they kept time to certain types of music as it was played. Very few suggestions were sent to schools using this program, because it was felt that each teacher would in this way be more free to use it to the best advantage in her particular class situation. This proved definitely to be the case. Drawings made to illustrate the story were the outgrowth of one such a broadcast. Another teacher used the story as a basis for word drill in a slow second grade class. Auditorium activities, puppet shows and
assembly programs were some of the activities inspired by the broadcasts. Because no instruction was sent, it was discovered that there were probably more uses for such a radio program than would have been thought possible had instructions been sent out previous to these trial programs.

Physical Training Program

During the month of May, 1937 a program to test the possibilities for teaching work in the physical education course of study, with a view of establishing a uniform procedure, was presented by Mr. Emil Rath, director of Physical Education. The topic for this broadcast was a Swedish folk dance called "Hop, Mother Annika." Instruction sheets and preparation material to be used preceding the broadcast, and suggestions for follow-up work after the broadcast were sent out ten days in advance. Included with this instruction sheet was a copy of the music of the dance which could be used by teachers in the schools before the broadcast. Piano music was used by Mr. Rath during the broadcast.

These programs, heard within the classroom, created such an interest in the use of radio in schools that a great many other schools immediately found means of buying themselves radio equipment and the number of schools possessing receiving sets increased from 22 in June 1935 to 70 in June, 1937. This means that 70 of the 86 elementary schools are equipped with radios.

Radio Exhibits

Exhibits of the radio work in the Indianapolis Public Schools showing class preparation sheets, radio scripts and student projects completed after the broadcasts were shown at three radio meetings during
the school year 1936-1937. These three exhibits were shown at the First Indiana Radio Conference at Purdue University, at the First National Conference on Educational Broadcasting, Washington, D. C., and at the Eighth Institute for Education by Radio, Ohio State University.

During the school year 1937-1938, the radio program has been enlarged slightly. Two story hour programs for primary grades are broadcast each month, a health program and a science program are presented once each month to junior high school students. Because of the expense, the art programs have been discontinued but the music series is again broadcast to pupils of fifth and sixth grades. Once a month a physical training lesson, under the direction of Mr. Emil Rath, is taught by radio. This latter program is the only direct-teaching use of radio in the Indianapolis public schools.

Future Outlook

The radio program for the school year 1938-1939 has not been definitely formulated. One difficulty Indianapolis has had to face is the securing of desirable time on the air. Both of the local stations have been most cooperative in offering their facilities to the schools but they are both members of national networks and have commercial contracts which must be honored. Twice during the past year one of the stations found it necessary to change the time of a school broadcast.

Mr. Glenn Van Auken, an Indianapolis attorney, has been granted a construction permit by the Federal Communications Commission to erect a 1000 watt daytime station at Indianapolis. Mr. Van Auken stated in his application that he proposes to form a community radio council composed of represen-
tatives of the Chamber of Commerce, Better Business Bureau, service clubs, public schools, Parent-Teacher Association, Department of Conservation of Indiana and other organizations, whose purpose would be to coordinate service clubs employing radio facilities, to determine civic programs best suited to meet the needs of the community, and to secure the best talent available for the production of such programs. Mr. Van Auken intends to offer his services to the Indianapolis Public Schools. What effect this will have on the future of radio education in Indianapolis is highly problematical. The station will probably be completed in the near future. Purdue University has petitioned the Federal Communications Commission for permission to increase the power of its station WBAA and to move its studio to Indianapolis. Two other companies have requested franchises to operate stations in Indianapolis. Whether all these requests are to be granted and how they will affect the radio education activities of the public schools remains to be seen. At any rate Indianapolis has joined the onward march of education by radio.

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1 Education by Radio, VII (June, 1937), p. 27.
CHAPTER V

PROPOSED OBJECTIVES FOR EDUCATION BY RADIO

Having reported radio in retrospective, consideration must now be given to the second part of the investigation -- the evaluation of education by radio. However, before any movement in education can be judged, it must be clearly understood exactly what are the aims of that movement. It seems logical, therefore, to give some attention now to the objectives of radio education.

Educators and broadcasters are identical in their desire to see American standards of education and culture raised to the highest possible level. Both groups recognize the power of broadcasting as a means to this end. Formerly education had for its aim "knowledge for knowledge's sake" but since the advent of Dewey and the protagonists of the progressive education movement we have come to think of education as life itself, not a process of getting ready for the future, but of rich and purposeful living at each moment of life. This idea of education speaks for it as a process of life. It goes beyond the narrowing influence of classroom walls. It sweeps away all suggestions of a formal program, of a rigid curriculum, of a "steep and narrow path to some specialized learning."\(^1\)

According to this idea of education all the varied experiences of life contribute to its process and it is suggested that radio offers education a supplementary field of unlimited riches. There is no good excuse for the admission of radio in the schools unless it can accomplish something that cannot otherwise be accomplished or unless it can supply something which the teacher cannot give the pupils.

In considering precisely what function radio should perform there is danger in expecting too much from its use. No device, however effective, can perform all the duties of the school. It must always remain a part of the whole. We are awed by the part radio plays in our daily lives. We are enthusiastic by the wonder of it and are stunned by the rapid development it has made and is still making. With short wave reception an established fact and television promised for the near future, is it any wonder that radio is expected to produce any miracle it may be called upon to perform? Educators agree that radio can do much to stimulate the learning process but it has limitations. It can never take the place of the school or the classroom teacher. Within certain well defined limits radio probably can make some contribution to education but it should be expected to do only those things which it can do in a manner superior to other types of instruction.

The formulation of specific objectives of any new movement is sure to be colored by the viewpoint of the person considering the movement. When analyzing the component parts of any school system, there are four important groups: The administrative officials, the teachers, the pupils
and the general public. When radio joins forces with education a fifth group is introduced -- the radio industry. This is by no means an impotent group. Motion pictures may be shown in the schools practically independent of any outside force but radio instruction is absolutely dependent on the will of the personnel of the radio station. The objectives of each group are worthy of consideration.

The Administrative Official

There have been many conflicting opinions expressed by administrators as to what part radio should play in their schools. Superficial investigation has caused some to classify it as a fad to be avoided, others to accept it as a panacea. Both are grievously wrong. Educational leaders quite generally agree that radio, if it is to be used by the schools, must contribute something concrete to the work of the schools such as enrichment of the curriculum or the improvement of instruction. These are perhaps the two objectives of the educational leader.

Cline M. Koon, in an address before the Department of Supervisors and Directors of Instruction of the National Education Association made the following remarks on this subject:

The ultimate place that radio will occupy in the American School system will be determined by the educators themselves. As leaders in educational theory and practice, the supervisors and directors of instruction must assume a large responsibility of determining what is to be broadcast for schools; what methods of broadcasting are to be employed; and how the broadcast lessons are to be used in the school.

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If educational leaders accept a broad social conception of education, they will realize with ever-increasing significance the importance of harnessing radio and putting it to work to help bear the constantly growing burdens of education.\(^3\)

**The Teacher**

Administrative officers may be convinced that radio has much to offer education but the classroom teacher must be convinced of the general usefulness of radio listening in instruction and must be shown the exact contribution which this device will make to her individual classroom activities. Any attempt of an administrative official to force radio upon his teachers will be doomed to certain failure.\(^4\) There is an element of fear in the attitude of many teachers toward radio -- the fear that radio will displace them in the schools. Some others, who are sensible enough to realize that no mechanical device can replace the personal influence and inspiration of a good teacher, fear that they may be reduced to the status of meaningless automatons in a factory system of mechanical education. They see themselves reduced to the role of keeping pupils in good order, so that the machine-like education may continue. To the teacher, education is something personal and intimate. It is little wonder that teachers stand somewhat confused, hesitant and fearful on the brink of this new development in education. They must be convinced conclusively that their places in the educational plan will


never be replaced by anything mechanical. Then, and only then, will radio function effectively in classroom instruction. Then teachers will formulate definite objectives from their own viewpoint. These objectives will probably include the adding of variety to classroom procedure and of direct assistance in teaching by the furnishing of demonstration lessons. For pupils, teachers may hope that radio will furnish practical opportunities to foster the fine art of listening attentively and purposefully.  

The Third Viewpoint

The third viewpoint to be considered is that of the pupil who is to be the recipient of this new type of instruction. The pupil knows little about the underlying objectives. He is thoroughly familiar with radio in his home life. He listens to programs actively or passively as his personal interests dictate. When radio is introduced in his school life, he accepts the new innovation eagerly because it adds entertainment and zest to the school day. He wants the radio because of the additional variety and novelty it presents. He likes it because it affords a touch of excitement and adds freshness to the learning process. He is vaguely conscious that radio opens up a new world to him and he appreciates the fact that this method of acquiring information is "easier" than the laborious method of reading it out of books. A junior high school boy was heard to remark: "It would take me an hour to read what that lady said in fifteen minutes and I remember it better, too." Perhaps this

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5 B. H. Darrow, op. cit., p. 67.
6 Ibid., p. 68.
remark sums up what the pupils expect radio to do for them.

The General Public

Although not directly connected with the schools, the general public is perhaps more interested in them than in any other social or public institution. The public wants to know and to keep in touch with what the public schools are doing. They are interested in comparing modern methods with the "way it was done when they went to school." Before the advent of radio in the schools, adult listeners could not hear teaching done day by day in modern fashion unless they visited the schools. This practice has not been followed except by actively interested parents. Another desire of the public is to understand the needs of the schools. These schools represent the major public investment. If the schools are to continue in public confidence and support, the public should be informed by the schools themselves what is being done and how the needs of the times are being met. The general public, then, wants radio to keep it in personal touch with the activities of the public schools by presenting programs intended for classroom consumption.

The Radio Industry

As has been indicated, radio education brings an alien group to the ranks of those interested in the public schools -- the members of the radio industry. The industry includes both manufacturers of equipment and broadcasters. Certainly these two factions must be admitted. With-

out equipment there can be no reception and without broadcasters, equipment is useless. The radio industry has been ever willing to do its part in furthering the advances of education by radio. This interest has not always been for selfish reasons. Radio station officials have freely offered their broadcasting facilities to the schools and, in a few cases, manufacturers have generously loaned or made free gifts of equipment. That their motives have not always been devoid of self-interest should not be condemned. In order to give satisfactory service an extensive investment must be made in mechanical equipment, facilities and general personnel. A station must be privately endowed or operate on a Commercial basis. If a radio manufacturer is to continue operating, he must sell what his factory produces. The free advertising he may enjoy by his generosity to the schools should not be criticized too severely.

Perhaps the chief objective of this last group is the desire to see their industry stabilized. They want education by radio to dignify and justify radio to the sober-minded folk whose enthusiasm might become dampened. They want a larger number of listeners and more discriminating listeners. Further, they may hope that education may eventually accept a part of the burden of broadcasting. The radio manufacturer hopes that the schools will buy more receiving sets. Finally, the industry has a right to expect that if it is of great benefit to the schools, eventually education may be one of its important sources of income.8

Outline of Aims

Mr. B. H. Darrow in his interesting book Radio, the Assistant Teacher, presents the aims of the five mentioned groups in the following outline which has been reworded somewhat and partially deleted:9

Five Viewpoints on Radio Education.

A. The Educational Leader

1. To extend the benefits of the teaching of exceptional teachers to all schools in the only way it can be done so effectively and so economically -- by radio.

2. To add to the teaching staff of every school, the leaders in many lines of human progress -- artists, scientists, authors, statesmen, business leaders, and so on -- the teachers of all of us.

3. To bring to the schoolroom the instruction and inspiration of participating in great history-making events at home and abroad.
   a. International broadcasts.
   b. Addresses of government officials.
   c. Special events as the Coronation.

4. To initiate new movements more effectively.
   a. By making the new leadership and material available.
   b. By enabling all to profit by expert introduction of the movement.
   c. By carefully experimenting with new ideas and new plans to be evaluated by the cooperating teachers.

9Ibid., p. 70, ff.
5. To unify educational forces of the state and nation.
   a. By enabling administrators, teachers and pupils to acquire common experiences more effectively than in any other way, thus breaking down artificial barriers and making for homogenity.
   b. By effectively promoting the ideals of the state and national officers of education.

B. The Classroom Teacher.
   1. To obtain the help and encouragement which comes with the addition of expert professional and non-professional teachers and contact with world events.
   2. To enrich classroom instruction.
   3. To assist in teaching the pupils to listen attentively.
   4. To stimulate thinking and increase pupil activity.
   5. To serve as demonstration lessons for the teacher, thus offering training while in service.

C. The Pupil.
   1. To make school more enjoyable.
      a. By adding variety in subject matter, methods, viewpoint and personality of the teachers.
      b. By adding novelty.
      c. By removing the need for at least a part of the uninteresting drill work.
      d. By adding more of the arts which have made the theatre attractive.
2. To make school work more interesting.

3. To make instruction easier to remember.

D. The Public.

1. To afford a feasible plan of reuniting parent and teacher in educating the child.

2. To increase the public appreciation of the work of the schools, especially of groups not directly reached except through the radio.

   a. By directing their attention to educational matters and reawakening their interest in them.

   b. By affording them a new appreciation and understanding of present day school work.

   c. By making the interest a daily one instead of an occasional one, thus engendering an abiding interest in the work of the public schools.

   d. By enlightening the tax-payers so that they become willing to pay for better schools.

   e. By bridging the gulf which education sometimes causes between parents and their children.

3. To develop an appreciation of good radio programs.

   a. By the pupils developing a taste for worthwhile programs in school and also a discrimination by which they differentiate between worthy and worthless broadcasts.

E. The Radio Industry.
1. To stabilize a great enterprise.
   a. Enabling it to work as well as play.
   b. Emphasizing worth as well as wit.
   c. Providing permanent development and growth as well as passing amusement.
   d. Enabling it to increase its universality of appeal.
   e. Increasing the number of listeners.
   f. Deepening of listeners dependence on broadcasting.

2. To stimulate sales of radio equipment.

3. To provide a new source of revenue that may come increasingly from government sources, private benefactions, foundations or legitimate sponsorship.

The objectives of these groups claim our notice but, since the question under investigation is education by radio in the public schools, the specific contribution radio can make as an enriching experience to the pupils, and as an inspiration to the teacher, are the most important of the functions it should be expected to perform.

The most Important Objectives

In the school year 1929-1930 the Ohio School of the Air sent a questionnaire to teachers using the school programs. As a result eleven objectives were suggested for instruction by radio. These were then ranked for importance by 134 teachers in the following order:

1. To broaden the vision or outlook of the pupils.

2. To supplement classroom teaching.

3. To create, hold and utilize interest.
4. To develop further intellectual culture.
5. To advance the cause of education.
6. To inspire the pupil.
7. To develop habits of concentration, thought and listening.
8. To stimulate voluntary self-activity along desirable lines.
9. To stimulate the efforts of the teacher.
10. To supply needed recreational benefits.
11. To allow the teacher to study individual differences.\(^\text{10}\)

Many experts in radio education have advanced theories regarding the definite way in which each of these objectives may be realized by radio.

1. To broaden the outlook or vision of the pupils. -- One of the aims of education is to widen the horizon of the learner. Very few people realize the effect upon children in our public schools of the limited environment in which they live. One of the great services that radio may perform is to add to the number of personalities with which the children of our schools come into daily contact. The services of broadcast talks similarly makes possible an expansion of interests, "opening the windows of the mind to new worlds of knowledge and experience beyond the capacity of any individual teacher, however gifted, to impart."\(^\text{11}\) Instead of receiving information and gaining ideas from one

\(^{10}\) B. D. Jarvis, "Teachers' Uses of the Ohio School of the Air." Education on the Air. Columbus: Ohio State University, 1932. Pp. 162-163.

teacher or a few at most, the broadcast lessons enable pupils to hear many teachers and to vision things from many new points of view. Radio breaks the isolation in which teachers and pupils sometimes find themselves. They become more keenly aware of themselves as a part of the world in which they live. The business of education tends to become less a factual process and more an interpretive one, an interpretation of life and right living and adaptation to change. Obviously to do a better job along these lines we must know about the "other half." Both teacher and pupil can profit by a wider perspective. Radio may bring the whole world to the classroom. An exchange of ideas, problems, and activities on their level by children from all parts of the United States in definite and periodic radio time should make for a better social understanding. Radio is expected to offer a vast opportunity for sharing of helpful experience.

Another way in which radio may broaden their vision is by permitting pupils to become participants in world events. They may tune in on such ceremonies as a presidential inauguration, the coronation of a king, or the description of a national catastrophe. Their world is thus enlarged.

2. To supplement classroom teaching. — It is quite generally agreed that radio's principal virtue lies in its value as a supplement to the efforts of the individual teacher. Most of them advance the theory

that ordinary instruction, consisting of fundamentals which can be found in the text book, should not be done by radio. They hold that radio has no right to existence other than as a source of new information, since it permits pupils to hear lessons conducted by specialists.

It is difficult for a teacher to keep the material to be studied fresh, true and recent. Likewise, few teachers have the time, or the ability, to keep abreast of the progress of all the subjects which they are called upon to teach. Radio may bring this recent material within the reach of every classroom. Previously our main source of information was the printed page. Radio may make instruction and information available at the same time from many places and by many persons with widely different interests and viewpoints.

3. To create, hold and utilize interest. — Only by radio can scores of the most worthy living men and women make their contribution directly to the thousands of classrooms; only can their message be given so forcefully to the citizens of tomorrow. 13 This hearing of national heroes or men of note arouses the interest of the pupils. It is possible by radio to present a dramatization of an historical event with much less effort than a classroom attempt at such procedure would be. The radio, by clothing some of the characters of history with voice and motion, is able to quicken the imagination and interest of many children who may not have been able to think of such characters as having actually existed.

As well as creating interest radio is expected to hold the interest of the pupils. Students of radio education claim that radio does do this. They say that there is an authenticity about the radio lesson which attracts attention and holds it. A fact stated in words by one who should know and who is heard immediately by pupils has a tendency to remain longer in the pupils' consciousness than the same fact read from a printed page. It is possible for the broadcasting teacher to make her lesson more interesting by using tricks of voice inflection or well placed pauses. It is this personal touch which is necessary to lend emphasis to some vital point and to impress it definitely upon the pupil. New angles of old facts and new applications of old principles may be introduced to arouse interest, and to connect the student's thinking with previously acquired knowledge. Presenting newer points of view, thus clearing up old errors or reinforcing sound opinions should be one of the aims of radio education.

4. To develop further intellectual culture. — It is quite generally conceded that the development of appreciation is a desirable function of education. Many types of appreciation are possible in the subject of art, music, and literature. It is claimed that radio can recreate the classics and may also bring present day literature to the pupils in realistic fashion. Because the teacher has not the time to read widely and continuously in order to supply this background, a series

of programs in literature appreciation would be very effective. Likewise art appreciation is expected to be developed by means of radio talks and music appreciation by providing concert lessons of the best music, chosen with the age of the audience in mind and accompanied by explanatory comments.

5. To advance the cause of education. -- By bringing leaders in education and other leading men before the microphone, the importance of education may be brought to the attention of the pupil, the parents and the public. Without the intelligent cooperation of the public, no school project can succeed.

6. To inspire the pupil. -- Before pupils can be really inspired, their emotions must be stirred. A program of national or international importance causes the pupil to respond emotionally. He is conscious that thousands of other persons are sharing the listening experience with him. He understands he is an integral part in the event.

Another source of inspiration from the radio is the bringing of stimulating personalities into the lives of pupils. Only by radio can worthy living men and women make their contribution direct to thousands of classrooms, only by radio can their message be given so forcefully to the future citizens. By hearing the voice and feeling the personality, it is hoped to make the child more inspired than by receiving the message.

from books or some other means. The master teacher can fire the pupil's imagination by the intelligent presentation of a lesson in a more effective manner than that which may be done by the classroom teacher who is his constant companion day after day.

7. To develop habits of concentration, thought and listening. ---

Before a broadcast a listening situation is created. The responsibility for thoughtful listening is definitely placed on the pupil. In reporting results of radio education in Cleveland, Mr. Neil D. Mathews, makes the following remarks:

Pupils receiving the lessons are noticeably more responsive to spoken suggestions and appear to be able to concentrate to a greater degree than pupils regularly taught. The fact that radio lessons are something of a novelty seems to be insufficient explanation of this, in as much as some of the Cleveland pupils have been receiving weekly radio lessons for several semesters with no apparent diminution of concentration. As is the case with lessons regularly taught, the degree of attention from pupils is directly proportional to the quality of the lesson plus the expertness with which it is presented.17

8. To stimulate voluntary self-activity along desirable lines. ---

It has been quite generally held by opponents of radio education that the use of such programs in school work is contrary to the philosophy of an "activity" curriculum. Although "hearing" a radio program may be passive, "listening" to a program is an activity and may lead to still further activity, providing the program is stimulating and if proper guidance and help are given to the listeners. The weakness of this objective lies in the fact that its effectiveness is dependent on the type of

program, although most radio programs are planned with some definite purpose. If the broadcasting teacher raises questions the pupil will be led to seek further information or to verify facts. Healthy intellectual curiosity is the best key for unlocking the door to mental growth. Worthwhile research is stimulating and may be the means of further study. By means of this further study, dormant abilities may be awakened and utilized and the way may be opened for further development of these abilities.

9. To stimulate the efforts of the teacher. — Teachers are expected to improve their own techniques by seeing good teachers perform. It is expected that the regular classroom teacher will improve her mode of instruction by hearing lessons taught by master teachers. The preparation of lessons for radio presentation tends to center attention upon the importance of lesson planning. Constant criticism of the lessons brings a realization of the desirability of eliminating all superfluous and irrelevant material. The regular teacher is free to observe carefully the attention and reaction of her pupils. The classroom has been defined as the clearing house where all channels of learning and the most progressive methods of procedure are adapted to the pupil's need and ability to accomplish progress in our civilization.


Through the expert use of radio lessons, new methods of teaching may be introduced and new viewpoints may be presented. The radio lessons may be used as a means for careful experimentation with new ideas, through the cooperation of the classroom teachers.20

10. To supply needed recreational benefits. -- Most educators seem to agree that the recreational side of radio is its greatest asset. This does not necessarily mean that radio should be used solely because of the entertainment it affords. Schools of the air have presented history and literature in the form of dramatization in order that boys and girls may catch the beauty and the compelling force of an incident in history or a story in literature, perhaps catch it in such a way that their reading may take on new meanings and seem more inspired. It is hoped that children may learn to see drama, even though it may be "imprisoned in cold type."21

That the radio has a definite recreational value for music appreciation, is quite unanimously agreed by students of radio education. Abundant opportunity is given for listening to masterpieces of music. From the Damrosch concerts children learn that music may become a fascinating experience of life. Music is essentially an auditory subject. The average teacher is not an expert musician. Radio, therefore, is an excellent means for permitting pupils to hear excellent singers or enjoy


different sorts of musical compositions played upon different instruments.

11. To allow the teacher to study individual differences. --

Just as the invention of the many household electrical appliances have lightened the burdens of the housewife, radio is expected to free the teacher for wider service in her classroom and allow her more time to study her pupils and devote her energies to their guidance and inspiration. Using broadcast lessons enables her to study the reaction of individual pupils and to assist each in gaining maximum benefit from the lessons. During the radio lesson, the teacher is given an opportunity to observe her pupils without distraction in a much more efficient way than when she is doing the teaching herself.

In the years to come the objectives of radio instruction will probably change many times. Perhaps radio will be expected to do more, perhaps less for the cause of education. At the present most authorities seem to agree that its greatest function is to supplement the work of the classroom teacher and not to take her place in the educational scheme.
CHAPTER VI

SCHOOL USE OF RADIO

To be fair, an evaluation of radio education should report how radio is being used by the schools and some of the factors necessary for its effective use. In many respects radio is the most amazing instrument ever placed in the hands of the classroom teachers. Through the magic of magnetic waves it puts the most isolated school in touch with the world of sound. It can vitalize and modernize textbook instruction. It can bring the living world into every classroom. It can give pupils the best that America has to offer in music, science, drama and the auditory arts. At present it is the cheapest known medium for the dissemination of mass instruction. Through the voices of expert instructors, by stimulating pupil interest and by supplementing the teacher's limited resources, it can increase the effectiveness of the large financial outlay required by education. It has demonstrated that it can do all these things. These are not mere theoretical hopes but here and there each of these services has been realized.¹

Factors Retarding Progress

If radio can do all these things, the question arises as to why the

public schools have been so slow in adopting it. Teachers themselves have
been slow in seizing upon radio as an educational aid. Correspondence
with the United States Office of Education gives the information that their
latest survey, conducted in 1935, revealed that there were only 12,342
radios and centralized sound systems among the 82,297 school buildings
reported in the study. This is an average of but one radio for every
6.7 buildings. Only a relatively small number of classroom teachers
are using the radio with any regularity.

Radio is undergoing the same experience that music, art, health
education and social science had when they first tried to gain a place
in the school program. Each of these newer subjects passed through a
period of trial and experimental practice. They met and conquered the
serious obstacle in the argument of the crowded curriculum. Each had
to overcome prejudice, tradition and the resistance of many educators
to new ideas. For each of them a suitable technique of instruction had
to be discovered and demonstrated. Radio is an instructional device
and not a subject in the curriculum, but it is undergoing the same
initiation to which all new-comers to the charmed circle of educational
practices have been subjected. The average teacher learns more readily
by practice than by theory. The schools want to know how to use radio,
not how theorists say it may be done. If radio is used in a haphazard,
sporadic, or capricious manner, it will never justify its existence as
a supplementary aid to instruction.

There are many ways in which the radio can be dealt with in the
public school. All of these practices are to be found in schools here and there which are attempting to meet the situation. The field is so new that it is not possible to point to the ideal use of radio in the schools. It is necessary to try this plan and that until, with the improvement of practice and the refinement of evaluation, it is possible to determine the best arrangement for an individual school. At the present the only criteria for evaluating radio's use in the schools is the experience of those who have experimented with this new device and who have presented their ideas on the subject.

The most obvious way is to bring the radio into the classroom as a teaching tool. In this connection, it is necessary to distinguish between the direct teaching, on the one hand, and integral enrichment, on the other. These two types are supported by contrary philosophies of education -- the traditionalists and the progressives. Yet both these groups have contributed and are contributing much to the increased use of radio.

Radio as a Direct Teaching Device

Direct teaching over the radio is represented by that type of broadcast in which a teaching broadcaster in the studio gives direct instruction to pupils in classrooms, presenting directions to be followed, asking questions, conducting drills and tests and in a large measure following a pattern of classroom teaching making such adaptations as are needed for the physical limitations of the radio. There are two outstanding examples of this use for radio instruction in the United States. One
is the broadcasts of arithmetic in Cleveland, and the other, the science broadcasts in Rochester.

In Cleveland the lessons in arithmetic are sent to the classrooms twice a week. Lesson sheets allow the child to participate during the teaching period, while between broadcasts, drill sheets afford practice on the abilities presented in the lesson. This plan means that the teacher in the broadcasting studio not only controls the amount of subject material but also directs the method of learning its content. The aim of the lessons is to produce better computers than are now produced by regular classroom instruction, and to improve methods of teaching arithmetic.

Dr. R. G. Jones, superintendent of the Cleveland Public Schools, is one of the ardent supporters of direct teaching by radio as is shown in his conclusions:

A teacher or supervisor may become competent and skillful in instruction, in a given subject -- in short, a specialist. We believe that such a master teacher, through the medium of the radio, may set an example to classroom teachers by giving instruction directly to pupils. . . . In the average classroom the teacher inevitably suggests the child's line of thought by the methods in which the question is stated. In radio the child can be, and may be, an independent thinker. We also believe . . . that lesson material will be more carefully prepared. In so far as the large system of school is concerned, if uniformity of work is desired, this item can be assured; and it is probable that we shall want both individuality and uniformity, varying with the nature of the subjects and the nature of the treatments.

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2B. H. Darrow, op. cit., p. 141.

The science course in Rochester grew out of a real need. With building operations discontinued because of the depression, it was found that the junior high schools lacked seating capacities to care for many 7B pupils who normally would have entered the schools in January, 1933. To have these pupils retained in the elementary schools, where there was inadequate science equipment and no trained science teachers, seemed very undesirable at a time when a twelve year science education had begun to function successfully. At this crucial time station WHAM of Rochester offered the superintendent of schools free time on the air for educational purposes. It was decided to utilize this time for a science course, thus making it possible for the 7B pupils to remain in the elementary classrooms and, at the same time, receive science instruction.

By means of radio, the situation was explained to the parents and their help in assisting the pupils to perform simple experiments at home, was solicited. The entire burden of teaching science was assumed by a specialist at the microphone. Thus the classroom teacher was relieved of routine classroom work. Mr. Carpenter in his conclusion of this use for radio says:

Radio in education must be seriously reckoned with. That it will ever replace the trained science teacher with necessary rooms and equipment is to be doubted; but that it may relieve the science teacher of much routine work so that he may devote his energies in more profitable directions, is probable, at least in the elementary school science and in the lower grades of junior high school science.4

Later in his discussion Mr. Carpenter sounds a note of warning when

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he states:

Radio is in education to stay. It has entered our schools as an aid to teaching. Will radio in education do to the members of the teaching profession what the machine has done to the laborer in industry? . . . In my opinion, unless we, as educators, are wiser than leaders of industry, radio will disrupt our ranks. On the other hand, if we are wise, we will take steps to ensure the use of radio as an aid to teaching and not as a substitute for teachers.

Conflicting Opinions

Not all experts agree that direct teaching is valuable. I. Keith Tyler, of Ohio State University takes an opposite view. He attacks the argument advanced that radio improved instruction by pointing out that a broadcast or two might have the same value that observation of another teacher at work might have but beyond that it would tend to harm rather than help. For if teachers are to improve they need examples that are typical of the kind of situation in which they find themselves. They need, not carefully standardized procedure, but observation of other teachers meeting individual problems, making adaptations to individual differences, and modifying routine so that pupils and teachers may each contribute fully to the realizing of the objectives of the particular group. Likewise, direct radio teaching would rob the classroom teacher of much practical experience because she is reduced to the position of carrying out the plans and assignments of the master teacher.5

To decide which of these conflicting opinions carries the most weight is difficult. There is one fact Mr. Tyler seems to have over-

5I. Keith Tyler, "The Use of Radio in the Classroom," op. cit., pp. 245-246.
looked in his criticism when he states that direct observation is superior to hearing model lessons over the radio. In the average school system it is almost impossible for teachers in the schools to visit other teachers, their visiting time being very short. The supervisors of instruction, because of the large area they must cover, cannot present their teachers with outstanding lessons and radio might fill this gap. On the other hand the claims of Mr. Jones for direct radio teaching may seem too enthusiastic but he has for his authority nine years of successful experience in using this type of radio education. Only from controversy does constructive thinking materialize and this suggested way of using radio for direct teaching seems to be the cause of much contrary opinion. Only time will approve or disapprove this use of radio in the schools.

The Use of Extra-school Broadcasts

The majority of radio education authorities agree that radio is best used as a tool for integral enrichment. This is the purpose of most of the school broadcasts. But there is another source of enrichment in the radio programs on the air not specifically designed for a school audience. The average American is usually thought of as representing eighth-grade attainment, so that programs, to be within his power of understanding, must be of eighth-grade level or less. For this reason, though they are planned for an adult audience, the programs really are, in large propor-

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tion, within the comprehension of elementary-school children. If, in addition to being within the comprehension of children, they are also within the range of the children's interests, they may well be used in the classroom.

Current events programs are valuable. The timeliness of the reports, the variety of points of view presented, and the ease with which the material may be brought to pupils make radio news an important aid in modern teaching. There are two principal reasons for using such material. First of all boys and girls may become acquainted with events in the world round about them and recognize vital human problems in everyday life. Second, such programs may be used to give practice in the ability of discriminating with regard to sources of information, to recognize bias, to search for accurate statements of facts, to interpret facts in terms of their broader meanings and to distinguish between objectives and impassioned treatment of the news. Both goals are important in the preparation of boys and girls for life in the modern world. There are also many programs of simple talks, dramatizations, music and debates which can be used successfully in the classroom. Although such material is not graded and labeled for schools, it offers much that is contributory to school life.

In evaluating this use it must be remembered that radio must be used only if it helps in the attainment of important educational objectives. There is danger that radio may become an end in itself and its use may overshadow the use made of other important sources of information and inspiration. Books, magazines, newspapers, motion pictures, and first-hand experiences through excursions and experimentation must not be
neglected as worthwhile aids to learning. But as a source of news the radio is peculiarly useful. It does afford a variety of points of view and is, therefore, a splendid means for developing a discriminating attitude toward sources of both information and opinion.

Training in Standards of Appreciation

Another important way in which the school may deal with radio is in teaching boys and girls standards of appreciation for radio programs. Radio listening plays such an important part in the lives of modern boys and girls as to demand treatment in the school curriculum. A survey of the John Smart Junior High School of Fort Wayne, Indiana showed that the pupils of that school averaged nearly two and one-half hours a day listening to the radio. Only about one-fifth of this was classroom listening. Because radio takes so much of the time of boys and girls it needs examination and interpretation. It refuses to be ignored. Educators may deny school time to this new instrument, but the radio will do its educational job, good or bad, for boys and girls outside school hours. It seems only sensible that the school make a place for the development of discriminating listening so that boys and girls may learn to separate the wheat from the chaff.

There are at least four goals which might well motivate instruction in this field: (1) to acquaint pupils with the influence exerted by radio; (2) to develop techniques for evaluating broadcasts; (3) to make worth-

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while selections upon the basis of the evaluation; and (4) to inspire children to exert their influence upon others. 8

By pointing out the influence that radio has played in the speech habits of people and leading them to question why radio is used to such a large degree by political and other leaders, older children may be led to realize the first goal. It is doubtful whether children below high school level could be led to understand this influence.

The first step in developing techniques for evaluation is the study of many programs representing a wide range of type and quality. Students must be encouraged to listen to local stations and to network offerings and to superior and inferior programs. In class discussions they may compare these programs, weigh one against another, discover standards of excellence and become conscious of faults. New fields of interest may be opened up. Children will probably not be expected to prefer symphony to jazz, but rather they may be led to acquire their own criteria for recognizing worth in each. They may become alert to propaganda in news broadcasts and conscious of bias in other types of programs.

The task in selection is to want students to create dislike for that which is unfair or untrue; disgust for that which is cheap and tawdry and indifference for that which is trivial. It is necessary to study lists of available broadcasts and discover what good programs are

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not being heard by the children. The teacher must be tactful. Her course should be one of artful suggestion -- suggestion that they try to listen to some programs which she considers more worthy. She should emphasize those good features of the broadcast which she knows will appeal to the group. She can then lead the class in analyzing both the broadcasts they like and the ones which they dislike.\(^9\)

If the first three goals are attained, the fourth should be easy to acquire. Parents are usually interested in children's discussions and are willing to cooperate in any school project. Also, many thoughtful parents realize that much of the material broadcast for children is undesirable. This subject is being discussed by many local parents' clubs and national radio committees of women are giving the matter careful consideration.

That it is possible to use radio successfully in teaching discrimination has yet to be proved. Many children's programs offer enticing baits of badges, buttons and other gadgets which have a decided appeal to young listeners. If it is true that as we train the youth of today, so will the next generation be, we may expect little improvements in radio programs until the youth of today becomes the listening public of tomorrow.

**Miscellaneous Uses**

In an address before the National Education Association Annual

\(^9\)B. H. Darrow, "Can the Schools Teach Discrimination in Radio Listening?" *op. cit.*, pp. 312-314.
Convention held in Columbus, Ohio in 1930, Margaret Harrison suggested some miscellaneous uses for radio education. These are more or less extraneous uses but are interesting to consider:

1. As a library or reference book -- the child is assigned a program to report to the rest of the class.

2. As an improvement in standards of speech, of pronunciation and of dramatization techniques.

3. Varied point of view it gives -- the average child hears only points of view of teacher, text books and parents. Usually these viewpoints agree. In using radio in this respect, children must be taught that what the radio speakers say is not necessarily the last word on the subject.

In a one room school in Connecticut, the radio was used as a new source of stimulation for creative verse. It cannot be claimed that the radio was responsible for the writing of verses, but from the nature of the poetry, it was evident that the radio programs gave new material and new ideas which were developed in verse form. The programs enlarged the scope of subjects and gave vicarious experience which the children used in their poetry.


Radio as a Measurement of Intelligence

Perhaps the most unique use suggested for radio is for the measuring of intelligence. The writer who suggests this claims that radio can do this with more accuracy than the vast series of intelligence tests now on the market. His argument is that present day criteria of intelligence measure all children with a very hasty assumption that up to the time the measuring scale is applied all children have had an equal chance to develop their native abilities. Particularly does the intelligence test claim to measure native ability solely and to avoid the variable factor of training. The weakness of the intelligence test, as Mr. Wivel, the author of the article sees it, is in the fact that it makes the assumption that all children have been exposed to the same environment. This assumption has long been a mooted question among educators, philosophers and the public. Even in the case of achievement tests, aimed to measure training, the type of training, the tools, and the teaching personnel may have been so dissimilar that it is unfair to make comparisons between cities or schools or even between different sections of the same school. But with a program of radio education, the pupils can be assured of a training that is definite and on precisely the same basis for all children in all schools and places. When the measuring rod has been applied to students of radio education, it is with absolute confidence that the examiner knows he is measuring subject matter that has been given to all students in a similar

manner and with the variable factors of length of time for lessons, reviews, summaries, teaching methods and content of material practically eliminated. Testing of material used through radio education can be accomplished over a wide area with a large number of children with a "far greater degree of reliability than many of the popular intelligence and achievement tests now being used throughout the nation. Radio education is full of possibilities for measuring results."13

On the surface this claim for radio's use seems partly reasonable and partly fantastic. It seems to take too much for granted. It rests on the theory that the content of the tests must be based on material used through radio education. The theory also assumes that all children will be exposed to the same programs. This is an impossibility at the present time and there seems to be no evidence to show that radio will ever be so universal. The physical limitations of radio forbid such wide-spread use. Mr. Wivel's theory seems to suggest a narrowing of the child's training to only such material as the radio has to offer, while the majority of authorities on radio education claim for it only a place as one of the experiences in the life of the child.

Radio in Rural Areas

Radio has been used to great advantage in the public schools of the cities but it probably will prove of greater value in isolated rural areas, which have limited equipment and few well-trained teachers. In many respects, the rural schools have not kept pace with modern edu-

13 Ibid., p. 473.
cational thought and industrial progress. The radio stands ready to assist in raising standards of rural education for those teachers who are willing to be helped. The rural school is in need of more adequate supervision. The radio is ready to assume the gigantic task of carrying expert supervision to every rural school in the nation.\(^{14}\) The rural school pupil needs no longer accept passively the outgrown type of schooling he has been subjected to but, by a relatively small outlay of radio equipment, he will be able to participate in those additional advantages which have come to his more favored city cousins. The rural teacher may be helped to become a better teacher through more direct supervision by radio contact, and can provide herself an assistant teacher in every unit of her activity. The radio should give some relief from monotony with its new voices and refreshing music. No longer need lack of contact with the great leaders of the world handicap the teacher and the pupil in these isolated districts. Features that none but the largest schools can now enjoy may be possible for the smallest school through radio instruction. Radio may be used to energize the whole day's program and make each rural school house a place of delight rather than a haunt of monotonous classes and dull study periods.

As well as enlivening the experiences of her pupils, the teacher in isolated schools may find the radio a source of constructive help in her teaching methods. She could have a wealth of supervisory assistance at

her command. She may hear the state superintendent himself, an opportunity seldom available under existing conditions or she may be advised by the best supervisor of a given subject that a teacher-training institution affords. The radio may also permit her to "attend" in her own classroom a fine inspirational lecture.

This is probably the zenith point of radio's contribution to education. It gives to the rural teacher the benefit of expert assistance. Under the traditional plan of supervision, it is generally true that a supervisor may be strong in one phase of her work, but she may be weak in other equally important phases. The radio can bring to the rural teacher experts in every phase of her classroom activities. The result of all this should be a value as great as if supervisors in person should actually visit the rural schools at regular and somewhat frequent intervals. This plan of radio supervision is used in the rural schools of South Dakota.

The list of uses for radio education given is by no means exhaustive but rather it is intended to show the versatility of this new device. It is becoming increasingly evident that the radio is gradually finding its way into the schools. Someday it may help to lessen the burden of all teachers. Why should teaching remain such a hard and difficult task? Why shouldn't use be made of an invention that has the possibility of helping the teacher do efficient work with less labor in less time?15

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CHAPTER VII

FACTORS IN EFFECTIVE USE OF RADIO EDUCATION

Few educators will disagree with the contention that radio may be used in the schools but they are cognizant of the fact that there are many factors to be considered before it can be used most effectively. They agree that this is no simple task. It is not merely a question of turning on the dial and permitting the pupils to hear a broadcast intended for the schools. The way in which radio may be used have been discussed. It is now time to consider exactly what factors enter in the effective use of radio education. So far as the schools are concerned, the most important question is not whether radio can be used, but how best to make use of this new tool which has entered their doors.

The Attitudes of the Teacher

The chief factor in the effective use of radio in education is the attitude of the classroom teacher. Classroom instruction by radio has no other problem comparable to that of attaining the best cooperation of the teacher herself. The best planned school radio program may be a complete failure if the teacher does not know or is not interested in learning how to use it. The nature of the pupils' interest depends largely upon the teacher. If she is indifferent in her attitudes, her pupils will reflect this attitude. If she is genuinely interested in the radio, she will find
it easy to arouse the interest of the pupils. Many teachers are in a receptive frame of mind. They are enthusiastic about the merits of school broadcasting but appreciate the fact that it has limitations. These teachers have found that they must know (1) how to select or advise the selection of suitable equipment; (2) what type of program presentation are being used; (3) the offerings of available schools of the air; and (4) the art of teaching by radio. These will be considered in order.

The Equipment

In the majority of cases the equipment is purchased by school officials. The choice of such equipment should be wisely made. Good reception is essential to the success of the broadcast lesson. The attention of the pupils is lost if they are not forced to strain their ears in an effort to pick out words in a confusion of static. The speaker's voice should be reproduced in natural tones.

There are several arrangements being used for providing radio reception in the classroom. There is, for example, the central control system with wired receivers in each classroom, making possible not only the reception of broadcasts, but the playing of phonograph records, the making of announcements and even the presentation of special programs. Although this additional equipment increases the cost it values are many. The entire school can listen at one time to broadcasts programs without having

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to be crowded in to an auditorium. Of even more educative value is the possibility of preparing and presenting programs by the children themselves; a stimulating activity which may be richly creative and develop a variety of worthwhile skills. Mr. Murray A. Dallman, principal of public school number eighty-one of Indianapolis, has installed such equipment in his school. He reports some very interesting uses. Civic enterprises within the school are carried on successfully by committees of boys and girls who give their reports and discussions over the system to all classrooms involved.

The disadvantage of the central control system is its unwieldiness; the selection of programs takes place in the office rather than in the classroom. Most of such systems have a single channel so that only one program can be received at a time. This prevents the receiving of different programs by different rooms. It necessarily makes for a more formalized type of listening. While a program can be sent to one room or to many, yet not more than one program at a time can be heard simultaneously even when such an arrangement might permit more frequent use of the radio by classes engaged in widely different activities. When there is more than one channel there may, of course, be more than one program on the system thus permitting greater choice on the part of the teachers. The fact, however, that a teacher must make arrangements with the office to insure hearing some special program tends to reduce its use.²

A number of schools have a central radio with wired receivers in

²Ibid., p. 176.
various classroom but without provision for phonograph or microphone pickups. This type of equipment, while less expensive, is limited in its potentialities. There are very few radio programs which appeal to groups of children of widely different ages. Even where there are several groups of similar age, it is not usual for them to be engaged in the same type of learning activities. A single radio program would seldom fit naturally into the classroom situation in all the rooms.

Where radio is to be used informally for bringing programs to the individual classrooms, many teachers find the individual receiving set more satisfactory. The teacher is then free to use it whenever and however she may wish. While this type of equipment does not permit simultaneous reception, nor school prepared programs, except those actually put on the air by local broadcasting stations, it does make the radio a part of the teaching equipment to be used as any other device whenever it can make a real contribution to the teaching process.

Some schools are limited to a single radio in the auditorium. This is used with some success in the use of a program, such as some national event or the Damrosch concerts, where the appeal is to a range of grades and where children benefit from appreciation the situation or from hearing the music even though some of the words of the speaker are not distinctly understood. This arrangement is not satisfactory for programs involving much speech because the acoustics are often very bad. In

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addition, talking programs usually have a much narrower range of interest and appeal to a more select audience such as is represented by a single class in its own classroom.  

In deciding which plan to follow in choosing equipment, schools are governed by expense. Most schools cannot afford an outlay of large sums of money. It would seem that the less expensive individual classroom radio affords the most satisfaction. It is generally agreed that programs should be received in the regular classroom. There are many reasons for this. The volume of sound may be uniform for all listeners; supplementary aids are at hand; the teacher's leadership is felt more closely in a small group; no time is lost in passing to an auditorium; the "learning" rather than the "entertainment" situation is emphasized and discipline is easier to maintain.

The preferred placement of the radio is, whenever possible, where the pupils may face it. As children look in the direction from which a voice issues, the radio speaker should be approximately even with the eye and ear level of the seated pupils. Making a radio program a classroom procedure, policies similar to those used in the classroom should be followed. A loud speaker placed high on the wall forces a craning of necks with its accompanying nervous irritation. Some teachers report

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that they prefer an informal grouping about the radio as there is in listening to the teacher read or tell a story. The volume should be regulated so the pupils hear the voice in approximately the same quality of sound as the room teacher's voice. This creates a more normal classroom.

Choice of Programs

The teacher, with reception provided for, must determine what programs she desires to use in the classroom. In attempting to evaluate radio education, it is necessary to consider the question of its adaptation to the curriculum and the work of the class. It is not a question of imposing a program on the pupils but of permitting the pupils to follow such radio broadcasts. The classroom teacher must look over the entire radio instructional menu and make her choice circumspectly. In order to permit the teacher to make a judicious choice, the program of the broadcasts should be received long enough in advance. This program bulletin usually gives a short description of the nature of the subject, a statement of the purpose which the broadcast hopes to achieve, and an indication of the age -- grade level of the pupils for whom the broadcast is particularly intended.

The criteria for choosing radio programs for school use is the same as for the selection of any other teaching materials. It is important to select broadcasts which can be understood at the age level and intelligence level of the pupils who receive them. The type of presentation is important also. The subject matter and age level may be suitable but unless the presentation is of the right kind, it may lose some of its
instructional value. There are many types of program presentation being
used by schools of the air. The most popular of these are presented here.

The lecture is used quite extensively but it is not a good method
for elementary school children. For older children it has the value of
teaching them to grasp the outlines of the subject and to make comparisons.
But even with older children, the talk should be used sparingly. When it
is used, the length of the program should be limited to not more than
fifteen minutes. 6

A second type of technique used effectively is the dialogue. One
example of this is the interview. Perhaps the greatest problem in adapting
radio to classroom instruction is the matter of achieving a situation
which will be predominantly in the nature of an activity set-up and the
interview method, when skillfully employed, will enable the pupils to
enter vicariously into the discussion which is being carried on in the
studio for their benefit. 7 At certain points during the broadcast, the
interrogator introduces each questions and comments which are most likely
to suggest themselves to the minds of the listening students. Likewise,
the person being interviewed must utilize very consistently in his talk
such feelings and experiences as he shares with the listening audience,
"thus building his own contribution upon a ground of common experience

6 International Institute of Intellectual Cooperation. "An International
Survey of School Broadcasting," Education on the Air. Columbus:
Ohio State University, 1932. P. 319.

7 W. M. Brown, "New Education in Radio," High School Teacher, VII
and mutual interest." This method is used quite successfully in the science and library programs in Indianapolis. Teachers have said they like this type of program because the children seem most enthusiastic during the broadcasts. The interrogator in these programs is often a child and the children listening feel a certain kinship with the studio performers.

Another type of dialogue is the debate. This arouses the children's interests in much the same way as the interview. In England the unfinished debate is used quite extensively and is becoming popular in this country.

In this method one speaker opens and discusses his point of view on the question and another speaker replies. The broadcast is then terminated, leaving the pupils to finish the discussion.

Many radio education experts claim that the subject should be presented in an impressionistic fashion, which will strike the imagination of the listener and provoke his creative activity. Only in the dramatic presentation is this principle completely applied. In the dramatization it is necessary to make the scene live for the pupils and even to make it possible for them to imagine that they are living the scenes themselves. Mr. C. L. Manser, in an interesting discussion presents some arguments for the use of the dramatic method. He says:

The spirit that should accompany a fact, and perhaps augment it, is quite as important as the fact itself. To present truth is not enough; it should be presented as it touches human life. Dramatization

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8 Ibid., p. 332.
is well fitted for showing this relationship, and good dramatization puts prime emphasis upon significance. It has a peculiar faculty for making a generalization seem specific. It makes it possible to emphasize the fundamental or structural element so that details may be sketched in later. One might almost say that the use of dramatization provides a sort of pattern for one’s education, rather than the education itself. By stimulating interest, by adding emotional urge, by giving almost a visual aspect to the material, it combines elements so that they are much more effective than if they operated singly.10

For primary children, there are two types especially fitted and which meet with much success. One of these is the narrative, the other might be called “directed activities.” Young children enjoy a story whether it is based on fact or fiction, or whether it recounts anecdotes from the lives of celebrated men. The expression “directed activities” as used here refers to the form of radio presentation in which the listener is instructed to perform a definite activity during the broadcast. The most common types of directed activities given over the air are setting-up exercises, story plays and rhythmics.11

These are the principal types of programs from which the teacher may choose. Experimentation will probably be necessary before the maximum benefit may be received from school broadcasts. As has been stated, it is not necessary for a classroom teacher to try to use all the material suggested for her grade. Experience has shown that it is better to use


one series consistently than to try to follow many different series.

At the Sixteenth Annual Convention of California Secondary School Principals held at Santa Cruz in March, 1931 a report by the Conference group on Radio Education was given. It was agreed that certain standards should be applied to radio programs before they are used by the public schools. These standards are helpful in choosing extra school broadcasts. The program should:

1. Contribute to individual growth, either through educational value, inspirational value, or contact with worthwhile characters.

2. Be short.

3. Be suited to the experience and interests of the listeners.

4. Not bring in any detrimental factors either directly or indirectly.

5. Be thoroughly prepared and organized.

6. Be presented by one who has radio personality. 12

Fitting Radio into the Schedule

After the teacher has made her choice of programs, she is confronted with many troublesome items of planning. One which is particularly irksome, is the fitting of radio into existing schedules and curricula. Radio in the school seems, admittedly, to be only a device and as such it would naturally follow that radio lessons should be adapted to fit the schedules of the schools instead of the schools

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12California Quarterly of Secondary Education, VI (June, 1931) p. 415.
building their schedules around the radio program. It may occasionally be justifiable to disrupt a class in order that the pupils may listen to an important broadcast but, if the radio is to be used regularly in the classroom, its offerings should be a part of the subject being taught.\textsuperscript{13}

It may be necessary for the classroom teacher to arrange the daily schedule in order that the proper classes may receive the radio lessons. In a school where the teacher has the same pupils all day, it is comparatively easy to adjust the school schedule so that pupils who should listen can do so at the time of broadcast is on the air. But in departmental schools it is very difficult to make the schedule adjustments.

There are several plans suggested for fitting radio into the schedule of departmental schools. Sometimes the schedule is rearranged for each broadcast so that pupils may listen to subjects planned for their respective class. This is usually accomplished by a rearrangement of the time blocks of a daily schedule. A second method, commonly used by schools in listening to special broadcasts, is to adjust the schedule so that various classes can listen. The third method, and the most desirable of all if it can be worked out, is to set aside an activity period to coincide with the hour in which the various school broadcasts may be received. Then the pupils for whom the broadcasts are intended may listen, while the remainder of the pupils may engage in extra-curricular

\footnote{\textsuperscript{13} Cline M. Koon, "The Technique of Teaching with Radio," \textit{op. cit.}, p. 106.}
activities. If the nature of various broadcast series in known far enough in advance, schools can arrange their schedules to coincide with the desired radio programs they wish to use.

Adjusting Radio to the Curriculum

Another problem confronting the teacher who wishes to use radio in her classroom is the synchronizing of the broadcasts with the school curriculum. Ordinary radio programs are not expected to fit into the school curriculum, school broadcasts are. This fact is one of the reasons who radio programs are especially prepared and broadcast for schools. Since the school systems in any area do not have a common curriculum, there never will be a complete agreement between a series of school broadcasts and the classroom course of study. Within these limits, however, the broadcaster should attempt to determine what study sequence the majority of schools are following and adapt the radio series to this sequence. Other schools should then adapt their study courses to the radio series.

The matter of accommodation of the radio programs with the continuity of the daily instruction in the proper courses is not as difficult as might be expected. If it is material not contained in the course as taught, there is no conflict. If it covers the same ground as the text.


book, the teacher must determine the best procedure. Some teachers prefer to have the radio presentation first, taking notes and comparing them with the text later. Others prefer to cover the subject in the text first and to use the radio as a review. By far the greater number like to set their pace with that of the teacher at the microphone who has nearly always set a course that corresponds so nearly with that of the majority of textbooks, that this is easily done. While the latter choice is ideal from the point of view of the radio teacher, the local teacher has the responsibility of deciding what is best for her pupils in their particular location and environment.

Supplementary Material

From the beginning of broadcasting to schools, progressive educators have realized that classroom teachers and pupils using the broadcasts need supplementary printed information if they are to make the proper use of such programs. Many programs are unknown quantities before presentation, not only to the pupils, but to the teacher as well. If the teacher does not know what is coming, she cannot be expected to relate the program to the work of her class by advanced preparation. Increased development and use of teachers' manuals and other aids-to-study are highly recommended. In addition to printed announcements and special articles on forthcoming programs, the pioneers in the school use of radio decided, from the very first, to supply printed or mimeographed copies of the broadcasts, outlines of the subjects, and syllabi including guide questions, references for reading, suggestions for using the broadcasts, diagrams, illustrations and suggested visual aids. Sometimes this material is
prepared to cover the entire series of broadcasts. In such instances it is intended primarily for the use of the local teacher and is called a teacher's manual. Sometimes it is organized for the pupil's use and is called a pupil's notebook or guide. At other times material is issued in mimeographed form and is distributed weekly or monthly in advance of the broadcasts. The principal purpose of these aids-to-study is to make it easy for the listeners to make profitable use of the broadcasts. The use of this supplementary material is a most important element in the effective use of radio in the public schools.

The Art of Teaching by Radio

The last factor to be considered is the art of teaching by radio. Radio teaching should be dignified by the same handling as all other teaching -- not just a pleasant interlude. More listening is not enough. The ultimate responsibility lies with the classroom teacher. The broadcaster is not a teacher. He is simply a person with special knowledge and experience who, through the medium of a microphone, is placed at the disposal of the teacher and class. The broadcast lesson is a tool which the teacher can and should manipulate. 16 The problem confronting the teacher are three-fold. She must determine how to prepare her class for the broadcast, how to conduct herself during the radio lesson, and how to obtain the maximum benefit from the lesson.

Guided listening is a very important factor to the success of a

lesson by radio. The pupil will have a richer vicarious experience if he concentrates on the program and disregards distractions. Guided listening embraces the promotion of the proper mental attitudes -- desire and ability to listen. If the teacher obtains the cooperation and assistance of the pupils in making the advance preparations, she will be well on the way to the creation of this desire to listen. As for ability to listen, this must be cultivated. Children must learn to disregard extraneous noises. As a rule, they should have considerable practice in sustained attention, particularly attention to words coming from an instrument and unsupported by the presence of the speaker. This power is not likely to be very great at first. Children should be taught to be ear-minded as well as eye-minded. Otherwise they will develop very poor attitudes toward the radio lessons. 17

Radio-program listening, like any other type of learning situation, must not be thought of as an isolated experience apart from other school experiences. Pupils must be prepared for the intellectual and emotional experiences which the program is likely to offer, and they must have a purpose for listening. Simply turning on a radio program -- even though it may be recommended for school listening -- and admonishing the students to "listen carefully" does not indicate that, in listening, they are being educated. Unfortunately it is not so simple as that. If radio-program listening is to be educationally effective, careful advance preparation is as vitally necessary as the careful preparation which teacher have

been applying in the use of other educational materials.

The assignment covering the radio lesson should be specific. It should provide for definite activity on the part of the pupil. Likewise, the teacher should make some effort to arouse the curiosity of the pupils and should point out the central aim of the radio lesson. Prompt readiness is an important requisite for the success of a radio lesson. All visual and lesson material should be ready before the broadcast begins. A few minutes of quietness with an atmosphere of expectancy is conducive to the best listening.

The teacher's attitude during the broadcast should be one of active, intent listening. This is absolutely necessary in securing a similar attitude from the pupils. The teacher should assume a position near the loud speaker, in sight of the class, and near a blackboard or any visual materials needed during the lesson. Being in front of the room, the teacher is able to look into the faces of the listeners and can readily detect when a point has not been understood. This can be noted for further discussion and explanation. By standing in front the teacher can study the individual habits of listening and can make suggestions for their improvement. The classroom teacher ought to assume a calm demeanor. Any sign of nervous activity on her part will detract from the pupil's concentration. The auditory senses are the ones to be stimulated and the eyes may hinder quite as often as they may help unless the matter is closely controlled. A good teacher will succeed in her use of radio lessons because she applies her knowledge, uses her ingenuity and works hard to make every minute effective. The poor teacher's efforts
may be uncertain because she will not have the vision of accomplishment ahead, nor perhaps the ability or tendency to expend effort in "intelligent pedagogical guidance throughout a radio lesson."\textsuperscript{18}

After the broadcast there should be a complete review. Review is essential to all good teaching and this should apply with special force to broadcast lessons, where transient auditory impressions are the chief element.\textsuperscript{19} It will be necessary to revive and clarify these impressions with the aid of illustrations and other explanatory material. The radio lesson should be used as a means to stimulate thinking and lead to further related activity. It is the duty of the local teacher to vitalize the radio material. The radio teacher can only offer suggestions and point the way.

The form of possible activity is widely varied. For the purposes of some teachers, written or oral reports, based on the broadcast are desirable. In some subjects individual projects are directly or indirectly suggested by the radio teacher. In the largest number of cases, oral discussions, questions or short objectives tests may be sufficient. It is important that this review should not be a mere repetition of the material presented by the broadcast teacher. The important thing in instruction by radio is not merely that facts are transmitted but rather that these

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\textsuperscript{18}E. D. Jarvis, "Teachers' Use of the Ohio School of the Air," \textit{op. cit.}, pp. 170-171.  \\
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facts become an intimate part of the pupil's inner life and being.  

Mr. I. B. Anon in an article entitled, "Radio in the School Room," describes two typical radio lessons he observed. His article helps to illustrate the right and wrong use of radio lessons. The first lesson observed was a fifth grade geography lesson dealing with the topography of France. The class was prepared. Each child had his geography open at the map of France, ready to follow every detail of the discussion. Each pupil had pencil and note book ready and was instructed by the classroom teacher to take notes. The teacher turned on the radio, went to her desk and spent the entire time correcting papers. The lesson broadcast was very good. The pupils were instructed to locate streams, mountain ranges, and cities on the map. All the children looked at their maps, but very few were able to locate the places mentioned. Without the teacher's help, the children were lost. Very few notes were taken as the listeners were unable to spell the proper names. At the end of the lesson, the teacher called for the papers and gave a vague hint at a later discussion during an English period. The children had a very scanty idea of the talk and the teacher had little more. The period was almost a waste of time. This is a splendid example of the futility of radio teaching in the hands of an indifferent teacher.

The second lesson observed was a fourth grade hygiene lesson on the

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care of the skin. The class was prepared with paper and pencils ready.
The teacher participated actively during the lesson by writing unfamiliar
words on the blackboard. The children followed the radio teacher's
directions. After the broadcast the points covered were discussed, questions
were answered, amplifications and explanations were given. This lesson
was a wonderful demonstration of the power that radio can be for education
in the hands of a skillful teacher.

Summary

Radio education in England has reached a high degree of efficiency
and much of our theory has come from there. The entire program is in
the hands of the Central Council for School Broadcasting. This Council
has issued fourteen points for the most effective use of radio in the
schools.²² Portions of these are of a general character and are applicable
as fully to radio in the schools of the United States as well as in England.
They are presented here, in part, by way of conclusion because they present
in terse form the principal factors in the effective use of radio in edu-
cation.

1. Take all necessary pains to obtain good reception. The
attention of pupils must not be burdened with the effort of picking out
words from a blur of sound.

2. Place the loud speaker in such a position which will insure
every pupil's hearing the lesson. This may call for some change in the

²²Earl Y. Poore, "Radio in the Schools of England," School Executives
Magazine, L (April, 1931), pp. 386-388.
usual arrangement for seating the class, but all should be able to use such visual material as is required.

3. The broadcast lessons should supplement the efforts of the classroom teacher, justified only in so far as they supply information and mental stimulus beyond the ordinary resources of the school. It is unwise to use indiscriminately the entire program of broadcast lessons.

4. Consider the curriculum and program schedule of the school, its general character and special needs, before deciding what programs to use.

5. Study the aims of each broadcast course.

6. Make sure that all visual material indicated in the pamphlets is provided and that difficult words are written on the blackboard beforehand.

7. Practice in auditory perception should be one of the results of a well conducted broadcast lesson.

8. A broadcast lesson is a cooperation between a teacher in the classroom and a teacher at the microphone. The children should be helped in following the directions of the latter.

9. Each child should use his instruction sheets as directed by the broadcast teacher.

10. Note-taking should be held to a minimum. Primary children should not be expected to take any notes.

11. The radio lesson will need to be reviewed carefully.

12. Questions and exercises play an important part in the review of broadcast lessons.
13. It should be remembered that the broadcast teacher regards the classroom teacher as a colleague and will be glad to be consulted freely on any points of difficulty connected with the course.

14. Constructive criticism of the lessons and instruction manuals are of great value to the broadcast teachers.
CHAPTER VIII

CRITICAL JUDGMENT OF RADIO EDUCATION

Having considered the objectives of radio instruction, how it is being used and what factors contribute to its most effectual use, it is now consistent to pass judgment on radio education. This judgment should be done by applying to it the same criteria used in evaluating any educational device.

It is difficult to say at present how far school broadcasting has progressed toward its final place in our educational system. Any close investigation on strictly scientific lines is hardly possible at this time. As broadcast lessons are intended chiefly to supplement the class teacher’s work, no comparison with ordinary teaching can be made. Furthermore, it has been pointed out that the cooperation of the room teacher is necessary for the success of radio lessons and this factor must be taken into account when any attempt is made to gauge success or failure.

Radio and the Aims of Education

Many of the difficulties met in using the radio wisely are rooted quite as much as in the narrowness of the thinking about learning and teaching as they are in the limitations of radio itself. Many of the programs which are available for use are by no means perfect. Even the broadcasts planned and produced especially for schools often fall far short of achiev-
ing the excellence which might be expected of them. Radio programs must not be judged by what they contribute to the regular school subjects. Educators no longer believe that the learning of subject matter is the principal aim of education. School subjects themselves have been judged by the degree to which they contribute to the general purpose of education. It would seem to follow then, that the proper criteria for judging radio lessons would be in terms of their direct contribution to the educative process.

Education is a term so inclusive and means so much that there is a great difference of opinion as to exactly what its real function is. Among other things it has been claimed that it should inspire us to learn from everything in the world about us and should equip us to master the fine art of living. All life is a series of adjustments between man and his environment, and education in its largest sense is the process designed to make such adjustments easy. As the relationship between man and his environment changes, the functions of education change accordingly. Education is expected to do more than make immediate adjustments easy. Since the individual does not go to school all his life, education is intended to enable him to make adjustments to his changing environment long after he has left school. If we accept this social conception of education, we must judge radio in the light of what it contributes to the accepted

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2 B. H. Darrow, "Radio -- A New Tool in Education," *op. cit.*., p. 117.
aims of education.

A consideration of this social conception seems to indicate that improvement of conduct seems to be the general aim of education. Improvement of individual conduct will bring adjustment to the institutions of society, more commonly referred to as the "Seven Cardinal Aims of Education." These cardinal objectives set for schools the following responsibilities in teaching children: (1) how to keep well, (2) their responsibility to the home, (3) to master the tools, techniques and the spirit of learning, (4) their responsibilities as citizens, (5) how to use their leisure and (6) the fundamental principles of ethical character. To attain these objectives, a teacher must make use of every activity, every tool, and every source of information available to her pupils. Schools gradually have learned to make use of newspapers, magazines, visual aids and other supplementary instruments. Now they are beginning to recognize the usefulness of radio and this recognition should be in terms of radio's contribution to the cardinal objectives. But, as has been stated elsewhere, radio is only one tool of this educative process. In judging radio education this point must always be kept in mind. Radio cannot assure its users a realization of all seven objectives. It is doubtful if any device can ever bring about such a realization.

Mr. Boyd H. Baldwin, Chairman of the Montana State Radio Committee, made an investigation of radio's contribution to the six mental functions

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which constitute improvement of individual conduct. The mental functions considered were: the individual's ability to solve problems, his acquisition of knowledge and skills, his growth in social competence, development of his creative activity and his ability to experience esthetically.4

Problem solving. -- The modern educational broadcast is capable of assisting the student in raising the problems, providing the conditions and even suggesting solutions. The capable teacher may assist in the work of carrying out the problems solving process to a logical conclusion.

Acquisition of knowledge. -- Psychologists tell us that the ability to acquire knowledge rises from the stimulus -- response nature of the individual. Furthermore, the greater the intensity or vigor with which one concentrates his attention upon a situation and the responses he is making thereto, the greater is the learning.5 The radio brings stimuli to the student at the most impressionable of levels, and should definitely stamp this modern invention as a vital medium of education. It can directly assist in the acquiring of new knowledge. Its great motivating and vitalizing influence in all the subjects should lend a greater significance to the knowledge acquired from textbooks.

Acquisition of skills. -- Except in the case of direct instruction by radio, it is probable that most skills acquired through radio are incidental. Most skills are developed through action and it would seem


that the skill of concentration would be the only one developed.

Development of social competence. — Social competence implies the ability of an individual to live successful in society. It implies the ability to react intelligently to one's fellows and to stimulate them to react favorably to him. Attitudes and ideals are very important in the formation of this ability. Joy Elmer Morgan in an address at the 1931 National Education Association made the following statement:

The most fundamental thing about any life is its purpose, and when you analyze purpose into its elements, you find that those elements are made up of attitudes. The attitudes are rarely taught directly. In most cases they are taught indirectly. They are associated with the emotions and the feelings. They grow out of the atmosphere in which the child spends his life. They respond to the influences of the home, the school, the church, associations, books, moving pictures, and radio. In proportion as these attitudes are right or wrong, they may make or break the entire life of the individual youth. The human voice on the radio registers feelings in its infinite variety and shades and intensity in a way that the printed page is unable to do. 6

Creative activity and esthetic experience. — Like the recreational use of radio, esthetic experience is already in great use. It is, of course, impossible to experience paintings or sculpture over the air. The development of television would definitely add this art to the existing radio arts — literature, drama, and music. Radio drama has been slow to develop. This is due, perhaps, to the fact that it called for a new type of dramatic excellence wherein physical expression could play no part. It is quite possible that the radio drama may bring forth

a new degree of reflective-esthetic experience, lacking in the conventional theatre.

In the development of creative activity, radio has great potentialities. Mention has been made of radio lessons being used as a stimulant to write creative verse. In Oakland, California schools, under the direction of Dr. Arthur S. Garbett, are actually teaching grade school children to compose their own music by radio.7

These evaluations of radio in terms of the aims of education are, as yet, purely theoretical. While much has been done with radio in various localities, the contributions which it will eventually make to education will have to be determined by more intensive experiment and research.

Psychological Criteria

Can radio education measure up to the psychological and physiological demands of an educative device? It has been rather severely attacked along these lines. Present day physiology recognizes three functions of the nervous system which are a basic part of the innate equipment of all human beings. They are developments of three of the fundamental protoplasmic properties—sensitivity, conductivity, and modifiability. They make learning possible.8 This learning is dependent upon the child's having the capacity to make any one of a number of responses to a particular situation. On the other hand retention is dependent on certain

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factor's such as practice, repetition, association and organization of material learned. Motor learning is also held to be more permanent than informational learning, probably because of the greater overlearning of many of the constituent elements in an act of skill. Gaining new experience, and retaining it, then, depends upon these important factors of interest, association, some effort and effect. If radio can stimulate these, learning is sure to be developed. Radio by its very nature is a method of stimuli provision. If we know the manner of operation of the stimulus-response situation, we should know the kind of stimuli required to produce desirable learning patterns. Psychology thus becomes a means of controlling response patterns through the control of stimuli propagation. The control of stimuli propagation is the problem of the educator, and fortunately radio is adaptable to almost perfect control.

Objective Measurement of Radio Factors

There are a great variety of factors that seem to require measurement in an attempt to evaluate radio education. Since radio, at present, is strictly an auditory device, the question arises as to whether the auditory method has any superiority over the visual method. Paul T. Rankin undertook an experiment to determine the importance of the listening function in learning. He found that of all the time spent by an individual in learning through communicative situation, he spends forty-two percent in listening, thirty-two percent in talking, eleven percent

9 Ibid., pp. 259-261.
in writing, and fifteen percent in reading.  

The relative value of auditory and visual methods is a problem that has often been studied but the results have not been clear-cut now immediately applicable to radio. Most studies of this matter have concluded that neither method exhibits any high degree of superiority. A critical ratio of only 1.03 in favor of auditory learning was found by D. A. Worcester in his controlled study. Of course, this study was not made with radio instruction in mind and it was made before radio broadcasting had become as prevalent as it is today. The latest data found on the subject was the reported tests of school physicians in Cleveland. These tests showed an improvement in the hearing of pupils who had had radio instruction. This fact suggests that the ability to get impressions through the ear is something that will grow with use just as the development of printing has tended to make us eye-minded.

Radio and the Materials of Education

As an educative device and as an integral part of the educative system, authorities in radio education agree that radio must have well chosen and well organized materials for broadcast. The radio educator

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must work with the general educator to assure proper selection and presentation of radio curricula. Mr. Baldwin found in his study that it is quite possible for radio curricula to be fashioned upon the principles of learning and it has been demonstrated that a majority of subjects may be taught effectively by radio. He found subjects taught by radio to rank in the following order as to effectiveness: Current Events, geography, nature study, social studies, music, health, literature, sciences, mathematics and foreign languages. Subjects taught least effectively by broadcast, however, often stimulates students to worthwhile activities in that field.

Radio as a Classroom Method

We have considered radio in the light of its contribution to the aims of education, to the learning process and to the school curricula. Now it becomes necessary to view radio as a classroom method. When we have our subject matter ready, it may be presented to the student through many mediums. We may call the medium the method. To use the same method at all times is not effective because it does not present stimuli in the variety of medium required by individual differences. The radio can assist by bringing that variety to the classroom which adds to the experience of the average teacher. Mr. Boyd Baldwin found that radio was ranked third among other methods; first rank being given to projects or individual methods of study; second rank to student evaluation of materials.

oral reports, problems, and individual instruction and fourth rank to examinations, visual methods and written work. These methods were judged on their inherent capacity to (1) stimulate activity and (2) adapt themselves to the mental functions. However, when it is remembered that a variety of methods is desirable, ranking would seem to assume a position of secondary importance.

The principle objection to radio instruction as a method seems to be that it has a tendency to create a passive attitude in pupils during a radio lesson. This tendency should be recognized and combated. Most radio enthusiasts are loath to recognize this element in radio education. Instead, they ignore the fact and, either intentionally or otherwise, try to smother it in panegyric writings. More conservative writers agree that the activity inspired by radio instruction is in direct proportion to the skill of the classroom teacher in utilizing the material broadcast. The radio must stand ranking beside other methods and when so rated ought to be accorded its peculiar place in education. If we can, through precision, refinement, and organization of material, do a better and faster job of teaching and learning, then the amplifier and loud speaker will be found in every classroom. This "if" looms large in the minds of many educational leaders.

Radio vs. Face-to-face Instruction

It was stated earlier that one of the factors retarding the progress

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of radio education was the fact that many teachers fear radio may supplant them in the classroom. This fact must be reckoned with. All teachers will agree that broadcasting offers to the educator a new instrument of enormous power which may be used rightly or wrongly. It has been pointed out that there can be no true education without discussion and one authority has described teaching as a kind of "conversation or turning together of the minds of teacher and taught."¹⁵ The problem in judging radio education is to determine whether this process of turning together can be effectually carried out when the teacher is not present in the classroom and when the approach to the minds of the pupil is through the voice alone. This is a problem which has been considered very carefully during the past few years.

Two separate investigations were made to determine the difference between an individual's mental processes when he listens to a speaker present in person and when he listens to a loud speaker.¹⁶ The first study compared various reactions of an audience listening before the radio to those of the same audience when face to face with the broadcaster. The experiments measured immediate memory, the individual's capacity for analysis, his comprehension, his ability to do mental arithmetic, his distractibility, the accuracy of his time estimation, his suggestibility,


the nature of his mental associations, his ability to judge emotional expression, and lastly the relative capacities of the speaker and the loud speaker to hold the attention of the listener. The second investigation was centered upon a comparison of regular class lectures with radio lectures given to the same class by the regular instructors. Most of the differences obtained, taken individually, were not especially striking. Nevertheless, when combined they seemed to show four real differences between radio and face-to-face presentations: 17

1. Although the physical presence of the speaker makes the face-to-face situation more complete and normal, the radio situation seems to be more solidly structured. It was thought that the gestures and facial expressions of the speaker tended to distract the attention of the listener. The radio presentation seemed more consecutive and monotonous in its appeal to just one sensory channel and allowed for fewer perceptual patterns to be discriminated.

2. The radio situation is less personal than the face-to-face situation. Words coming from the speaker out of sight are robbed of their personal setting. This factor would seem to show that radio presentation suffers wherever the factor of personal relationship is an important one in the delivery.

3. The face-to-face situation has more of the characteristics of a social situation.

4. Radio seems to have a slightly dulling effect upon higher

mental processes. In the face-to-face situation the listener is on the whole more analytical, more alert, more involved personally and socially and less passively receptive than he is in the radio situation. These findings should give encouragement to teachers who fear radio may oust them from the classrooms.

In addition to the reaction to the mental processes, face-to-face contact is needed in the educative process. To become educated, is not merely making one's self receptive, while facts are poured in. There must also be a drawing-out process, in which the learner is stimulated to relate these facts to his own personal life and thereby make discoveries concerning himself. It is in this process that the personal teacher is so vital. Direct oral instruction may be given over the radio, but to be maximally effective with children, the classroom teacher must be on hand to direct the learning activities that the instruction suggests and to make certain, through observations and questioning, that the instruction has actually been assimilated.

There is another shortcoming which radio has as a medium of instruction. Education today places much emphasis upon individual differences in children. A radio lesson cannot be built to fit in with the needs and capacities of each child. The radio cannot eliminate these individual differences. The lesson which is sufficiently rapid and difficult for the brightest pupils would be too rapid and difficult for the slowest pupils. The adaptation of the material presented to the individual in

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the class will always be the peculiar work of the classroom teacher.

Radio vs. Reading

Closely allied to face-to-face instruction is the use of reading as a means of gaining an education. Investigation has shown that there are certain variables that enter into any comparison of listening and reading situations. In the first place it was found that the effectiveness of auditory presentation tends to vary inversely with the difficulty of the material presented; secondly, the effectiveness of auditory presentation is limited to meaningful material, and tends to be superior for subject matter that is concrete and serial in nature; thirdly, if other conditions are kept constant, the mental functions of recognition, verbatim recall, and suggestibility seem more effectively aroused in listening, whereas critical attitudes and discriminative comprehension are favored by reading and finally, the higher the cultural level of the listener the greater is his ability to profit from radio presentation.

This investigation would seem to show that complex factual material is best learned by reading, as the student may go over it repeatedly and at his own rate of speed. For easy material, however, the radio is superior to reading. The study also implies that certain minds are frequently unable to listen intelligently to material which they could, perhaps with some difficulty, understand if they read it. In listening, their attention wanders and they cannot return to pick up lost threads.

\[19\] Hadley Cantril and Gordon W. Allport, \textit{op. cit.}, p. 159.
as they can from the printed page.\textsuperscript{20}

There is another side to these two questions presented by Willard M. Brown in an article, entitled "New Education by Radio" which appeared in \textit{The High School Teacher}, for November, 1931. Mr. Brown undertakes to show that a radio lesson is much more effective than a lesson from a textbook. His contention is that, since reading speeds vary greatly with different pupils, the radio lesson may carry the pupils through the fundamental groundwork of a lesson in a manner, and at a speed that is satisfactory to practically every pupil of a normal group.

In discussing the other question of the value of radio as compared with face-to-face instruction, Mr. Brown presents the viewpoint of the teacher. Where radio is used, irrelevant distraction which tend to distract the teacher and diminish her effectiveness are somewhat relieved for a period. Although pupils are prevented from asking questions, in themselves relevant, a decided advantage seems to result, for the questions often sidetrack the main issue of the lesson. Another point in the evaluation of the two types of instruction is the fact that there is something of suspense in a speaking situation where one's attention is monopolized by an unseen voice with the attending imageries which it stimulates. Children, especially, are prone to waste a lot of nervous energy and mental activity on the actions of a visible speaker. The radio is a valuable tool for the purpose of integrating lesson procedure and eliminating distracting elements.

\textsuperscript{20} \textit{Ibid.}, pp. 253-254.
Most of the investigators or writers on the subject make no claim for radio as a particularly superior instructional device. They are agreed that it probably just holds its own with the best teaching tools when objectively measured. Its chief contribution will probably be to supplement devices now in use. Too much enthusiasm may cloud the issues. It is highly desirable to weigh carefully the limitations as well as the advantages of the school use of radio before accepting it blindly. In doing so, a better insight into its proper place in education will be gained.

Limitations of Radio Education

There seem to be three outstanding limitations in the use of radio in the schools. The first of these is the unreliability of broadcasts for the transmission of factual material. A motion picture which can be repeated or a book which can be referred to, is much better than a single fleeting impression gained from a radio program.21 Most students devote more time to classroom exercises and textbooks than is given by an educational broadcast. This difficulty is recognized by authorities in radio education. The suggestion that electrical transcriptions of programs be recorded and made available to classroom has been made.

The second limitation is the possibility that much of the instruction given by means of radio might be too difficult or too uninteresting. It is assumed that radio work is graded as other school work is. However, in enthusiasm for their subject, the experts preparing programs sometimes

lose sight of the age and limited backgrounds of the pupils, for whom the
programs are intended. Indeed many, planned at too great a distance from
the actual classroom scene, appear to have little relation to the activi-
ties actually going on within school walls. However, often this lack of
relation and seeming unfitness of the program may be due to the kind of
purposes which we have in mind as guide teaching. Furthermore, programs,
prepared by serious-minded educators are likely to produce slow and tortu-
ous expositions which have no appeal to listening students. Educators
are slow to accept the fact that radio is a show business and that they
must use showmanship if their programs are to be effective. To them
education is a serious business and they are loath to resort to chi-
canery to catch the interest of students. Mr. John A. Elwood makes an
interesting observation about this point:

Perhaps we could learn from the teachers of twenty-three hundred
years ago. Plato and Socrates knew the value of dramatic education.
They sold their ideas to their students and to the world. Working on
the principle that it is the spoken and not the written word that is
most important, their dialogues are examples of the success of show-
manship in creating interest and attention. They sold education so
well that today they are still our best known teachers.

The third limitation advanced is the fact that effective radio
teaching requires two teachers. The radio teacher cannot help the indi-
vidual pupil. Education is something to be achieved, not something that
can be given to one. All children are different and radio programs,

23 Ibid., p. 23.
prepared for average children, will not do equally well for slow or bright children. Also, some children are eye-minded and some are ear-minded. Radio programs should be more successful with the latter group than with the former.  

Summary

To summarize the chief limitations of radio education seem to be:

1. By its very nature, radio requires careful attention on the part of the listeners and there is danger that important points may be missed.

2. In order to be really effective, the construction of radio programs must follow the principles of showmanship rather than those of accepted educational practice.

3. Radio lessons make little or no provision for individual physical or mental differences in the capacities of the pupils, for whom the programs are intended.

Throughout any judgment of radio education, it must be always remembered that radio is only a medium of communication. It cannot create ideas for school subjects. It cannot prepare materials for teaching. It can only transmit what is prepared for it by teachers and others. In all fairness, it must be noted that radio education has never had a fair trial. It has either been done diffusively as by the chains without enough close connection of broadcaster and the audience, or it has been done by

inadequate local schools of the air. Never has it been done under favorable conditions with adequate facilities and sufficient financial backing. That radio is being used with increased interest is quite generally agreed. Its future will probably depend on how it is considered. Teachers whose thinking is circumscribed by custom and the textbook may see in radio just another means for doing the same old things. Those who look upon radio as a means of accomplishing some of the important objectives which previously were difficult or impossible of attainment may see many opportunities for its utilization. Unbiased judgment is necessary. All radio asks is a fair trial.

CHAPTER IX

FACTORS IN FUTURE DEVELOPMENT

While this research is concerned with a retrospective study of radio education and a critical evaluation of its worth to the public schools, it was thought advisable to include this chapter on future development. This inclusion is justified on the grounds that because radio education is so young, its past, present and future developments are very closely knit together. Another justification might be advanced that radio projects in the schools are still in the experimental stage and are dependent on many salient problem factors for successful consummation. These problems have been realized but only the future will offer adequate solution. We are beginning to realize that radio is destined to affect the scope and progress of education. Educators are confident that they possess materials of high potential value but are aware that to date they have not in the main presented these materials effectively. There are many circumstances to be reckoned with before radio may make its own peculiar contribution to education with maximum efficiency. This chapter hopes to point out what some of the most important of these problems are.

Enlisting Professional Interest

It was pointed out earlier in the discussion that the attitude of
the teacher was a deterrent factor in the past development of radio education. This same attitude must be reckoned with in contemplating future developments. It is generally agreed that the teacher should cooperate with all agencies to develop the pupil's sense of personal responsibility as a member of the group in which he finds himself. The teacher should be conscientiously concerned in using the pupil's needs, interests, and experiences in cooperative planning so as to help him grow toward educational goals. She is responsible for providing experiences that will enable the pupil to grow in independent action which always recognizes that he is a responsible member of a group; that will acquaint him with a variety of experiences so that he may develop in the ability to make wise choices; and that will provide for his independent self-direction in selecting such activities which will provide for growth in the right direction.\(^1\) It has been claimed that radio is a most important educational instrument for providing such experiences.

As a general rule, teachers are anxious to provide such experiences for their pupils but many fail to see how radio can accomplish so much for the educative process. School broadcasting is so relatively new that educational practices has not absorbed it into the school. Convincing evidence that radio has value is lacking. Teachers are conservative, for the most part, but are usually open-minded. A signifi-

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A significant research project which will be carried on by Wisconsin University during the next two years may have far-reaching results. This project proposes to study the value of radio as an aid to classroom instruction.

The plan provides for a staff of radio specialists and educators, with facilities for experiments, demonstrations, school visits, and objective evaluation. Through careful observations, tests, and measurements an attempt will be made to discover the place of radio in the school and to appraise its importance in classroom education. This research project is financed by a special grant and is backed by the interest and support of leading educational agencies of the state. These include the State Department of Public Instruction, the State Board of Normal School Regents and state broadcasting station WHA, in addition to various departments of the university. Experimental broadcasts will be set up with definite objectives in harmony with those of classroom instruction. The evaluation will be in terms of the realization of those objectives.

During the first half year the research project will be concerned mainly with preliminary studies, planning and preparation of experimental broadcasts and setting up the machinery for evaluation. Students of radio education await eagerly the results of this experiment. It is the first serious attempt to evaluate radio in terms of educational aims.

Evidence of radio's value will be useless unless teachers are willing to experiment in their own classrooms. The future of radio is not in the hands of research workers but is at the mercy of educational interests.

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2 Announcement in Education by Radio, VII (October, 1937), p. 47.
These very interests should be the leaders in modernizing educational concepts and practices. Unfortunately this is not always the case. Too long the conception of education as a more or less mechanical process of implanting systematically organized information has pervaded the thinking of educators. As long as this concept of education persists, the radio cannot properly define its purpose and place in the process of education. Education by radio calls for men and women who have the pioneer spirit, who are well endowed with imagination, initiative and courage. This is no field for teachers who are unwilling or unable to lay aside tradition and to try new and difficult things, but it is an interesting and promising field.

Finance

In this problem of adapting radio to education, there are some practical problems to be concerned. Someone must pay the very high expenses of broadcasting and arranging suitable programs. The costs of broadcasting are large and there are no signs that they are to be reduced. How to support schools of the air has been a puzzling question ever since their inception. Up to the present radio in the public schools has been largely financed by the radio industry or by private enterprises. Neither of these plans has been especially successful in the progress of radio education.

Three plans have been proposed as suggestions for the financing of school broadcasts. First, that financial support come from the broadcasting industry. This is not acceptable to educational leaders for many
reasons. The most important of these is the fact that the first obligation of broadcasting stations is to the commercial interests which produce the income enabling them to exist. It is obvious that commercial broadcasters cannot take over school programs. America has always been and should continue to be zealous in maintaining the independence of the schools and the reliability of the instruction. While broadcasting stations have been most generous in contributing time for educational programs, but, in most cases, these programs have been prepared under the close supervision of educational leaders. There is no evidence the radio stations might produce inferior programs. On the contrary, programs produced under the direction of radio stations have been quite successful. The American School of the Air is one of these. However, it is not quite fair to ask the broadcast industry to unselfishly assume the burden of financing school programs.

The second plan proposes financial support from taxation under a system of control of radio. This is the system operating throughout most of Europe and the system almost always held up as the alternative to the system operating in this country. There are elements of repugnance in this proposal. Political control of any of the social institutions is frowned on by the people. This is especially true of the schools. Furthermore, experience has shown that the government has not been generous with appropriations for educational purposes.

3 "A Basis for Cooperation." Editorial in Education by Radio, VI (December, 1936), p. 47.
The third plan proposed is financial aid from private endowment. This is perhaps the best proposal advanced but it is the least likely to be followed. Here and there throughout the country there are a few local schools financed by private funds. The one outstanding example of endowment is the financing of the Cleveland School of the Air by the Rockefeller Foundation. What the future of the financial situation in radio education will be is impossible to forecast. It is only safe to hope that some day schools of the air will have adequate financing.

Sponsorship and Propaganda

It is interesting that the one method of financing most of our home programs -- commercial sponsorship -- was not suggested for school broadcasts. This question of a commercial sponsor has been the cause of much heated debate. An editorial in The Nations Schools for January, 1930 makes the following very positive statements:

One of the functions of education is to train the growing mind to a thorough understanding of logic and to enable it to reason out all problems that will in adulthood have to be faced. To poison the minds of children with false or antiquated statements, most of them not founded upon anything stronger than the propagandist's prejudice, is perhaps the most pernicious practice of the professional exhorter whose daily bread depends upon his ability to force his bias upon others. The schools must be kept free from all propaganda and it is the duty of the superintendent to protect the children from it.

These opponents of commercially sponsored programs see only the danger of introducing the wrong kind of propaganda into the schools. Experience does not bear out this contention. The commercial groups have been anxious to please the teacher and the pupils. Two vital questions should be weighed

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4 P. 74.
carefully in regard to all sponsorships; one is that the aim of the sponsor be a rightful one from the viewpoint of the schools and the other the question of when has the sponsor obtained his objective. If the sponsor has the wisdom to omit long sales talks, he may develop much good will.

Mr. William S. Hedges in an article entitled, "Commercial Sponsorship of Educational Programs," presents an opposing view on this question of sponsorship in the following words:

Some educators are horror stricken with the thought that the name of a commercial sponsor might be heard by the school children. Anything of a commercial aspect is not fit to enter the schoolroom, some of the respected members of the profession declare. After all what is education, but a preparation of life. It is impossible to remove all idea of a commercial world even if this were desirable. No one has ordered the publisher to take his name off the textbooks. Some of the furniture is stamped with the manufacturer's name. Unless the commercial advertising is given paramount importance, there can be no serious objection to commercial sponsorship of radio broadcasts for classrooms.

Conversation with teachers on this subject revealed the opinion that children are not hurt by reference to commercial products, even in broadcasts not intended primarily for the schools. One teacher made the statement that children are so used to hearing advertising in their home listening that their ears are trained to cease functioning during the "commercial" and begin operations when the program is resumed. Whether this is true or not has not been determined but it would seem that if to have radio programs

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5 B. H. Darrow, "Laison Difficulties of Schools of the Air," Education on the Air. Columbus: Ohio State University, 1930. P. 90

6 In Education on the Air. Columbus: Ohio State University, 1930. P. 48.
for schools requires it, educators should not hesitate to accept sponsorship of reputable organizations or concerns.

Administration

Closely allied to the question of finance is the problem of administration and control of radio education in the public schools. Suggestions that the Federal Government take charge of educational broadcasts have been advanced. Such a proposal may be dangerous for many reasons. In the first place, it is a step in the standardization of education. There is already complaint enough that our method of education is becoming cut and dried and that standard systems of education strip the students of individuality. Teachers must remember this and see that the individual traits of the pupils are not stifled. To have Federal control of radio educational broadcasts, might tend to level educational methods to mediocrity. There should be many programs from which teachers may make a selection of the best.

The alternative proposal that the individual states could take care of the educational broadcasts is subject to the same criticism, although to a lesser degree. State broadcasts would have the added limitation of being unable to command the cooperation of national leaders in education, who would be available for either the Federal Government network broadcasts or for commercially sponsored educational programs broadcast over nation-wide chains of stations.\(^7\)

Another plan of control which has been proposed is to have a chain

\(^7\) Ibid., p. 49.
of stations linked up with educational institutions in various parts of the nation to take charge of the broadcasts. The chief objection to this plan would come from the educational institutions not chosen. They would have the right to demand the same advantage of advertising themselves on the air.

Dr. W. C. Bagley thinks that perhaps he ultimate solution will be found in having local schools of the air present those subjects which are of particular interest. These would be under the administration of the city school officials working in cooperation with the local station. There could be regional schools of the air in which there would be a fair amount of standardization of subject matter which has a more general appeal. These could be controlled by state boards of education or by a council of several states working in close cooperation in the interests of economy and efficiency. Supplementing these two, there should be nation-wide schools of the air presenting the foremost authorities, the more difficult types of dramatizations requiring the best dramatic talent, great orchestras and, in general, the personalities and groups which the smaller organizations would find impossible to obtain or finance. The existing nation-wide chains may find it their function to present work of this type.

The ideal plan of control of radio education has not been realized. Education is a cumulative process. As soon as the ideal is reached, new goals are set up. It is well that the ideal system of radio educational

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control has not been reached. This will help to preserve this new educational instrument from depreciation in its value to the public schools.

The Use of Short Wave Reception

There have been some interesting developments in the past few years in radio reception. The most outstanding of these are the already accomplished fact of short wave reception and the experimentation in television. However, any mention of the use of these two inventions must, of course, be wholly speculative. The use of short wave broadcasts in school calls for the purchase of a powerful and expensive receiving set. It is hardly conceivable that short waves will ever supplant the ordinary standard wave or even be of great practical value to the ordinary educator. Their function seems to be to supplement other uses of radio or as a purely extra-curricular hobby. Inasmuch as they seem to become most powerful and usable in the United States during the earlier morning hours and in the evening, it is evident that their use as a supplement to regular teaching is very limited. Occasionally a thrill may be experienced and perhaps something worthwhile heard but their practical value is doubtful. In their present state of development, the short waves are erratic, undependable and often choked with static. Of course, it must be remembered that seventeen years ago, this very description would have fit the radio reception of that day. What the next seventeen years may bring in short wave reception is still an unknown quantity in radio education.

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Television

Television, an accomplished fact with regular program schedules in London, remains the great American mystery. It has been promised many times. The latest report is that television will be successfully demonstrated at the World Fair to be held in New York in 1939. Because of its expense, it will probably be many years before the schools could use it, even after it materializes. Of course, television would offer a new field for educational work by radio because it would use the eye as well as the ear as the gateway to the brain. The eye is, in general, considered superior to the ear as a channel of communication and should not be neglected if we wish to utilize fully the means of education by radio.

Before television is perfected there are many technical problems to be worked out. Before it can be successfully, it must be perfected until it is a device which may be used in the classroom under normal conditions.

Some Recent Developments

A recent event has caused the educators all over the country to do some serious thinking about the future potentialities of educational broadcasts. This momentous event was the unique program devised by the Chicago Board of Education during the recent poliomyelitis epidemic in the fall of 1937 when the opening of the elementary schools in that city was postponed several weeks. Seven radio stations donated time in fifteen minute periods throughout the day. Six newspapers carried a daily digest of each lesson to be broadcast, including directions, questions, and assignments for pupils.

These digests served as texts in the absence of books.

Mathematics, English, science, and social studies for grades from 3B to 8A inclusive were the subjects chosen. Broadcasting began on Monday, September 13, at 7:15 A.M. with a health and physical education program which was a daily feature. Lessons in social studies and science for the various grades were given at intervals throughout the day, the last period being from 6:45 to 7:00 P.M. On Tuesday lessons in English and mathematics were given. Wednesday's programs were the same as Monday's and the alternation continued throughout the week. 11

A committee of three was appointed in each subject to select material suitable for use over the radio, to plan the continuity of the lessons, and to be responsible for the broadcast. A committee of two principals was appointed to listen in to all broadcasts and to make suggestions for improvement. Pupils were instructed to keep all of the work done in connection with the radio lessons and present it to their teachers when school opened. A committee in each major subject was appointed to work out a test to be given to the children at that time. The results of this test were planned to determine the credit each child should receive for his work. These same committees made provisions for make up work for those children who did not have radios, or who were kept outside of Chicago during the epidemic. It was estimated that the number of children listening to the radio and using the newspaper texts was about 315,000. 12

12 Ibid.
The Chicago Board of Education is convinced that the plan was followed by both parents and children with earnestness and enthusiasm. Sixteen teachers, called in to supplement the staff at the central office, were unable to take care of all the calls received from parents who were distressed that they could not get a certain station on the radio and some child had missed a lesson, or because some speaker had given directions a little too fast and the child did not understand them. Many questions were answered on the first day of broadcasting, and five extra teachers were added the next day. Judith Waller, educational director of the National Broadcasting Company central division, believes the emergency broadcast may point the way to a closer cooperation between education and the radio interest. Mrs. B. F. Langworthy, editor of the Parent-Teacher Magazine described the series of broadcasts as "one of the finest services that the broadcasting companies could have rendered to the school children of a beleagured city."\(^{13}\)

What impetus the Chicago experiment will give to school broadcasting is quite speculative. Certainly education by radio is growing rapidly. A number of states have stations of their own. Others are mobilizing their forces to secure their rights on the air and are mapping out programs looking forward to the day when one of the most important educational institutions in the state will be its radio broadcasting station.\(^{14}\)


Mr. B. H. Darrow, an enthusiastic advocate of radio in the schools makes a very bold prediction.

I see the day when all schools will be equipped with radio. I expect to see the day, not many years hence, when television will make it possible to bring the visual world to the classroom. Then every American child may tour the world without leaving his classroom. He may know the world as definitely as understandingly as only the confirmed globe trotter has ever been able to know it, and this complete and satisfying piece of teaching will be the most productive and the least expensive that the world has ever known.16

Whether such a prophecy is merely a dream or may some day be an actuality is not our concern at this time. It is only safe to conjecture that radio as a force in education will go much farther in the future than it has progressed up to the present time.16 Very often education suffers in the introduction of new practices. Many unskilled persons rush into new projects unprepared and much condemnation results. Frequently a measure, wholly sound and fruitful, is abandoned because of bungling hands. It is to be hoped that radio may so command our respect and best power that we shall not use it unthinkingly and unprepared to get the best results from it. This would only retard its progress and prevent it from performing with maximum effectiveness as an educative device.


CHAPTER X

CONCLUSIONS AND RECOMMENDATIONS

To the student of radio education, the subject is most fascinating. Its potential uses are so numerous and varied that it captures the imagination. The subject is so large and possesses so many ramifications that only a very small phase of the subject has been considered in this research. The investigation has endeavored to report faithfully the findings of many authorities, limiting itself to the subject under consideration. A brief summary will, perhaps, help to give the reader a quick survey of the contents of the thesis.

Perhaps future students of radio education will refer to the period between 1920 and 1940 as the period of exploration in the story of educational broadcasting. During this period the world has been radio reception evolve from the chaos of jumbled sound to the refined selectivity of today. Likewise, during that period school programs have developed from the feeble efforts of the early experiments to the present successful schools of the air. Reliable data is not available but the guess may be hazarded that there is some radio education being carried on by some schools in practically every state in the union.

Educators have been compelled to reckon with this new force and have attempted to formulate some objectives for its use. In considering objec-
atives, the respective viewpoint of the teacher, pupil, school administrator, general public and radio industry are worthy of consideration. As an educative device educators agree that radio should supplement classroom teaching, create pupil interest, concentration and self-activity, broaden pupil outlook and intellectual culture and to serve the cause of education.

Radio education has failed, in many respects, to live up to the early predictions made for its use. The attitudes of the classroom teachers has been an important factor in the progress of radio instruction. Some teachers fear that radio will do to education what the machine has done to industry. However, the majority of authorities are firm in the belief that it will never supplant the efforts of the classroom teacher but it will function most effectively as a supplementary device.

When radio is looked upon as a means for enabling educators to accomplish some of the important objectives which previously were difficult or impossible of attainment, many opportunities for its utilization present themselves. It enables the teacher to break down, to a degree, the isolation of the classroom. It makes possible the marshalling of drama and music for educational purposes. It brings to the pupils at their desks a first-hand contact with the great personalities who are shaping the world. It makes impossible the closed mind that hears but one side of any question. The use to which radio is put reflects in no small degree the breadth of our educational thinking.

There has been some controversy on the use of radio in the schools. Some advocate it as a direct-teaching device but many more claim its most effective service will be as an instrument for "integral enrichment."
addition to regular programs intended for school consumption, there are certain extra-school broadcasts which may contribute to this enrichment. Another use proposed for radio is to teach pupils standards for evaluation of the programs they receive in their own homes. While many interesting suggestions have been made for the part radio should play in class instruction, the most efficient value seems to be derived from its use in rural areas. There it may be used as an effective supervisory instrument. It is hoped that radio will raise the standards of teaching in the rural schools.

It cannot be denied that radio is being used quite largely by schools throughout the United States. In some cases maximum benefit is being received from such instruction but in too many instances radio is not functioning as it should. From successful users of radio instruction have come some theories on the most effective use of this powerful device. They reiterate with ever increasing emphasis that the classroom teacher plays a most important role in the ultimate success of education by radio. If her attitude is one of indifference, it would be better if she did not use radio at all. In this connection Uline M. Koon states that the active participation of the local classroom teacher is so important that perhaps it is wrong to refer to the speakers at the microphone as broadcasting teachers. Perhaps it might be better to call them radio assistants to the classroom teachers. There are a few enthusiasts who seem to think that the whole job of teaching may be done over the air, but more conservative thinkers regard the classroom teachers' participation as an essential factor contributing to the success of practically every radio lesson that

The teacher, who is fully cognizant of what she expects radio to do for her, is confronted with the task of choosing programs which will assist her in realizing her formulated objectives. There is quite a variety of program presentation. Not all types may be adapted to the particular grade and subject for which they are intended. Radio programs may be roughly classified under seven general headings: (1) talks, (2) directed activities, (3) actuality broadcasts, (4) dialogues, (5) debates, (6) music, and (7) dramatizations. While there is no common agreement among broadcasting authorities as to the best mode of presentation, they seem to agree that the radio talk is the least suited for school use and that the dramatization is most effective.

The factor of adequate equipment is important in effective use of radio in the schools. Several types as, central control systems, auditorium sets, and individual receivers in each classroom are in use. Most users seem to agree that the latter type is the most successful.

Any educational device, worthy of use in the schools, should be submitted to some critical evaluation. Mr. Boyd F. Baldwin, chairman of the Montana State Radio Committee made a study of radio as an educational device.\footnote{Boyd F. Baldwin, "Radio as a Classroom Device," \textit{op. cit.}, P. 38.} In considering radio’s contribution to each of the six mental functions which constitute improvement of individual conduct --
the general aim of education -- Mr. Baldwin concludes that radio is an excellent assistant in the acquisition of knowledge and the development of social competence. He classifies it as a good aid in building the individual's ability to solve problems and in developing creative activity and esthetic experience, while in the acquisition of skills its utility is only fair.

Investigation showed that, while learning by the auditory route has only slight superiority over the visual, the listening function is of particular importance in learning. However, the radio learning situation has not been found to be superior to face-to-face instruction. The chief value of radio is to increase interest by adding variety and supplementary information. Proponents of education by radio agree that it is possible for radio curricula to be fashioned upon the principles of learning and it has been demonstrated that a majority of subjects may be taught effectively by radio. Subjects taught by radio are ranked in the following order as to effectiveness: current events, geography, nature study, social studies, music, health, literature, sciences, mathematics, and foreign languages.

Turning from the past to the future many problems are met. It would seem that the whole question of radio education seems to hinge on the attitude of education itself. Educators have been afraid of radio, have disregarded it entirely, or have suffered from the old tradition in education which meant the individual touch. Where radio has been used for educational instruction, they have insisted upon the old plan of putting
the "new wine in old bottles." They seem to feel that time has tested the process of education and it is not found wanting. It is hoped that schools will experiment and seek the best conditions for school broadcasting on a far larger scale than at present, for only by widespread experiment can a full knowledge be gained of the possibilities of any new educational practice. That school broadcasting has many possibilities is already evident but they cannot be realized until the cooperation of the schools is assured.

In addition to the attitudes of education toward radio, the question of finance looms large in the future development of radio education. There are two schools of thought on this subject. One supports the plan of commercial sponsorship, the other group decries with horror such a plan. At present the most common plan in use is sponsorship by the broadcast industry. The progress of radio education is largely due to the generosity of this group.

Many recommendations have been made for improving radio education in the public schools. Even under the existing conditions, there is need of cooperation between the various schools of the air to prevent wasteful duplication of effort. Perhaps in the future at an annual meeting of superintendents of schools there can be some discussion of what material should be presented by the air schools. Then, after this meeting, there should be a meeting of representatives of the various schools of the air.

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at which time it would be decided which groups were to present certain of those subjects chosen. 4

In development of radio for education there is the problem of the quality to be considered. Under the crowded conditions of the ordinary school, no teacher can be master of all the various tasks which she is obliged to perform. In a school of the air, which reaches large numbers, there is no place for unpreparedness and low standards. The radio teacher must be thoroughly prepared. The standards must be high. Difficulties must be anticipated and provided for. Material must be developed, tried out, tested, redeveloped, and perfected. 5

Five years ago, Mr. Joy Elmer Morgan advanced certain standards and recommendations for radio programs for schools. It is interesting to note that the ideas be advanced then are still being considered by serious thinkers on the subject.

1. Advertising in the form of sales talks or progress sponsored for their goodwill value must not be brought into the school.

2. School programs can best be administered on a local, regional and state basis rather than on a national basis.

3. The schools must have their full time channels, both day and evening.

4. The actual management of educational broadcasting will require specific staffs carefully trained for that work. Radio broadcasting cannot be done effectively as a sideline. It is a full time,

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highly technical occupation. The people who do this work should be broadly trained in education and psychology. 6

To assist in this process of writing, producing and broadcasting educational programs that are both interesting and authentically informative, a radio workshop has been established at the Ohio State University. More of these workshops are needed to train future broadcasters and program writers. It is hoped that in the future no school broadcasts will be put on the air without benefit of the techniques of some radio workshop. If worthwhile programs are to be assured, it follows that classroom teachers should be trained in their use. More teacher training schools should present courses in the techniques of teaching by radio.

There are two final recommendations which seem to represent the concensus of opinion of most educators. The first is that broadcasting for classroom use should be more closely integrated with the curriculum. This would seem to imply that the broadcasting would best be done by local stations for particae school systems and not by national broadcasting systems for general school use. The second suggestion is that classroom broadcasts should be more carefully controled and more exactly evaluated. Techniques for this purpose appear to involve a more careful formulation of objectives, a more precise determination of changes in pupil behavior because of the broadcasts, and a scientific evaluation of the results achieved in terms of the accepted objectives. 7

Mr. John W. Studebaker, United States Commissioner of Education, has offered six goals for the use of radio in the service of education during the next ten years.8

First: The vigorous development of educational radio producing groups. By 1946, there should be several thousand competent school and college students producing high grade programs regularly on both local commercial and educational stations.

Second: There must be further cooperation between educators and broadcasters through the Federal Radio Education Committee. This will require faith on the part of all concerned and adequate finances for investigation and research definitely planned to clear away the obstacle in the development of education by radio.

Third: Further experimentation and demonstration in educational radio by the Office of Education and expansion of its service to aid national, state, and local agencies interested in the problem.

Fourth: Development of practical training facilities for educators responsible for creating educational radio programs or in using such programs for instructional purposes.

Fifth: Establishment of shortwave stations by many local systems to serve rural areas as well as city systems.

Sixth: More adequate support for existing educational radio stations with an increase in their power and time to enable them to serve a large clientele.

With intelligent application of its forces, with vigorous attack on the existing problems, with foresight and cooperation on the part of all interested groups, it should be possible to find satisfactory solutions to many of the obstacles which are delaying the fullest development of education by radio. It is the anxious task of the present age to initiate a new service, to preface the way for genius to solve the problems involved. This may be done by courageously facing the task, by going ahead and making

8Ibid., p. 3.
mistakes and profiting by them. Radio is a new factor in education. Whether it will play a major or minor part in the ever moving drama of educational history only time and experience will determine. Seed has been planted which should produce even more fruit in years to come than has yet been harvested.

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MISCELLANEOUS


