

many sheets were in it and how many sheets each child in the room would be entitled to. This meant doing long division. Some members of the group had sufficient experiential background and were mentally mature enough for the long division. They were aware of need and began practicing so as to be ready to meet further long division problems. To have forced practice on those who were not mature enough would have meant for them practice that was far from thorough. The immature pupils would have been unable to give all of their attention to the practice.

Over and over again children need arithmetic to help them think clearly during a discussion. A member of a fifth grade had to travel by car from Virginia to Nebraska. A friend said it would take six days to go and return. One child asked how far it was to Nebraska. Another said, "We can find out." The first child asked how. The answer by the class was, of course: "Use the scale of miles." This child then had to be helped to use it. He learned that each inch on the wall map before him represented one hundred and fifteen miles and that it was fourteen and one-half inches to Nebraska. Then he said that you could set down one hundred and fifteen fourteen times and add this. This was done and then he was shown what to do with the half inch. Naturally many members of class said they multiplied to get it because it was an easier way. The multiplication was done on the blackboard, too. Perhaps this child was mature enough to see this method of multiplying; if so, he made a step forward in his learning process.

If a child gives all of his attention to what he is reading, he must either get pleasure from reading a story or else enjoy locating a certain piece of information which he feels the need or desire for. During a Discussion Period, as has already been stated, children's interests in and need for subject matter is discovered. Often in a Work Period a child finds that he must

read to get some definite information that will help him in completing a job. Once he feels the desire to read factual material, he will read thoughtfully and usually will retain what he reads. A thorough reader must understand and interpret what he reads. He must read with eager attention.

During Discussion Periods and Work Periods a teacher has many opportunities to influence the language habits of the children. She has to see that each pupil speaks with sufficient clearness and force to enable all members of the class to understand him. While clearness and force in speaking are generally thought to be of first consideration, correctness in English is quite important. The person guiding a discussion can do much to correct speech errors. She may wait until a child is through speaking and then point out his error and have him correct it.

Children usually enjoy keeping a record of the outstanding class events. They can do better writing when they are having experiences about which they can write. Many of these experiences come through activities engaged in during either the Work Period or the Discussion Period.

Throughout this paper it has been pointed out that practice in the school subjects is effective and important for the child when his problem shows him what he really needs to know. In this situation he actually learns reading, arithmetic, and language as well as facts in the field of social studies.

GLADYS GOODMAN

NEW FACILITIES FOR EDUCATIONAL BROADCASTING

THE Federal Communications Commission has just announced the establishment of "a class of high frequency broadcast stations to be licensed to organized non-profit educational agencies for the purpose of transmitting educational programs directed to specific schools in the system for use in connection with the regu-

lar courses, as well as for routine and administrative material pertaining to the school system." This class of stations will be authorized to transmit educational and entertainment programs to school classes and the general public alike. The broadcast service to be rendered must be primarily of an educational character. No sponsored or commercial programs of any character may be broadcast.

"I am pleased to learn that the Federal Communications Commission has set aside a definite portion of this important national resource exclusively for educational purposes," says John W. Studebaker, U. S. Commissioner of Education. "The reservation of 25 channels means that a large number of allocations can be made to educational groups throughout the United States. Engineers point out that a minimum of about 50 stations in various parts of the country may use each frequency, since the ultra-high radio waves are distinctly local in character. This indicates that there is room in the sector reserved for at least 1,250 local nonprofit educational radio broadcasting stations.

"Opportunity to use these channels presents a great challenge to American education, but I am confident that education can rise to the opportunity to use these facilities which should affect the scope and progress of education and our national life with results just as revolutionary as those which followed the invention of the printing press.

"Evidence of a growing interest in educational radio programs and increasing activity on the part of schools and colleges in radio has been noted in the Office of Education. Within the last year and a half the Office has distributed, on request, more than 120,000 copies of educational radio scripts for presentation by schools and colleges over local stations or on public address systems. School broadcasting groups are springing up in this country like mushrooms after a spring rain. School officials, teachers, and students are rapidly acquiring fa-

miliarity with the techniques of radio which will enable them to use effectively the new frequencies set aside by the Federal Communications Commission.

"Many will wonder what significance this new allocation of the F.C.C., holds for school organizations," Dr. Studebaker said. "It is difficult to answer this question because it is almost impossible to imagine the variety of uses to which the nonprofit educational stations may be put. They will be used to stimulate the interest of students in subjects they would not ordinarily be eager to learn. This is being done at present, to a limited degree, in some cities over commercial stations. Detroit is engaging in such broadcasts. There will be broadcasts to classrooms as there now are to science classes in Rochester. Model lessons broadcast by especially expert teachers in various subjects will gradually improve classroom teaching. Cleveland is one city now following this practice. The University of Wisconsin's radio classes in singing doubtless will be duplicated in many other areas. Emergency use of radio for educational purposes is an important consideration. Chicago and Long Beach have made emergency use of radio to reach pupils in their homes when schools were closed.

"These frequencies can be a great boon to the isolated rural school with its one or two teachers. At present county superintendents or supervisors may be able to visit each school in the county or district only once or twice a year. Establishment of a radio station in conjunction with a county school system would enable the superintendent or supervisor to be in constant touch with all schools. The rural school curriculum could be vastly enriched through the proper development and use of education by radio.

"The Federal Communication Commission's announcement points out that these local non-profit educational stations will be authorized to transmit educational and entertainment programs to the general public

in every city and town maintaining such a station. With this broad charter it is not impossible to anticipate not only a major step forward in the education of children, but also programs for educating adults greatly extended beyond anything now existing. I can see that various types of programs involving many discussions of civic and social problems of interest to the general public which require more time than can be fitted into present-day radio schedules, may be broadcast successfully over these educational stations at times during the day when it is most convenient for people to listen.

"Educators and citizens in general should understand the characteristics of the frequencies which have been reserved," the Commissioner of Education pointed out. "In the first place, these frequencies lie between 41,000 and 42,000 kilocycles and are distinctly local in character. They will be serviceable at a radius of 5 to 15 miles from the transmitter. Reception will depend to a considerable degree on the height of the transmitter. A radio tower on a hilltop or at some convenient spot, therefore, probably will be a characteristic adjunct of many American schools in the not-too-distant future."

A warning of certain limitations at present governing use of the broadcasting facilities reserved for non-profit educational agencies was issued by Dr. Studebaker. He emphasized the fact that "swift acceptance of this opportunity by educational organizations is not to be expected. It will be a new experience for most educational organizations to be responsible for a broadcasting station. Educational agencies will have to study the problems of equipment, of personnel, of programming, and of budgeting for this new service. The frequencies allocated for education are not included in the shortwave range of radio sets now on the market, but the frequencies are very close to those reserved for commercial use, hence there is strong belief that manufac-

turers will begin to build sets which can tune in the wave length now reserved for non-commercial educational stations. I am informed, however, that present-day sets can be adapted at a small cost to receive the programs of these ultra-high frequency stations. It is evident, therefore, that the frequencies at first will be more useful for school communication than for general and adult education and entertainment.

"When broadcasting began in the early twenties, many colleges and universities obtained experimental licenses. At that time there was great hope that this new device for mass communication would be a boon to education, but educators became disheartened over the difficulties of using radio, especially in securing means adequately to finance the undertaking. Many institutions surrendered their licenses. In 15 years' time, however, many of the techniques of radio broadcasting have been discovered chiefly through commercial enterprise. Now educators are beginning to apply these techniques to the problems of radio in the service of education. The National Broadcasting Company and the Columbia Broadcasting System have developed widely-used educational radio programs. These have won general public acceptance and have demonstrated that the American citizens are eager for education by radio if it comes to them in a form which makes learning interesting as well as instructive. The success which has greeted these efforts is conclusive proof that educators can make good use of these frequencies reserved by the Federal Communications Commission if they will put adequate effort, energy and imagination into the task of using them.

"The Office of Education will begin at once to collect necessary information to help educational organizations know how to make application for these frequencies and to supply advice on the puzzling problems of equipment, personnel and programming."