Bulletin 1952, No. 16

TELEVISION in our SCHOOLS

by FRANKLIN DUNHAM
Chief, Educational Uses of Radio-Television
and
RONALD R. LOWDERMILK
Radio-TV Education Specialist

FEDERAL SECURITY AGENCY • OSCAR R. EWING, *Administrator*
Office of Education • • EARL JAMES MCGRATH, *Commissioner*

Contents

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1952

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 15 cents

Foreword

WHEN we think of the potential values, some of which have already been demonstrated, that lie in the application of television to teaching, we become aware of a mighty aid to education, waiting to be harnessed for use. In teaching skills, in providing illustrations for science and the social studies or the language arts, and, in fact, in art generally, television adds sight and sound. Wherever demonstration is required, the picture with sound can be of inestimable service to the learning process.

Television possesses the element of living experience, occurring at the moment, as we view it, that creates high interest and compels instant attention. Many school systems will soon have access to programs on their own or on nearby educational television stations, when programs can be built to meet individual curriculum needs. It is hoped that this first publication of the Office of Education in this field will be of value and service to those who are beginning now to use television as a teaching aid both within and outside their classrooms.

GALEN JONES,
Director, Instruction, Organization, and Services Branch.

WAYNE O. REED,
Assistant Commissioner for State and Local School Systems.

Introduction

TELEVISION presents a new, flexible, and inexpensive means of illustrating a lesson. Television is both audio and visual, to use the term audio-visual, applied in the past particularly to motion pictures, film strips, slides, recordings, and similar valuable aids to teaching.

Television is a picture in motion with sound occurring at the same moment being simultaneously brought to the ear. At television's best, things are actually happening when we see and hear them! It is living vital experience containing all the elements of human suspense and possibility of error as well as achievement. In the laboratory, viewing the operating table, picking up a news event, or watching a speaker or a spectator, what comes to our eyes and ears did not exist a moment before and may not exist a moment later. The best we could do now to preserve it would be to record it as a motion-picture film. Such films, called kinescopes can be made at considerably less time and effort than present-day films, and will, no doubt, provide rich libraries of additional materials for education in the future.

Radio (or sound alone) possesses the ability to (1) attract and hold interest, (2) stimulate the imagination, and (3) aid in the retention of factual material; that is, thought cast into sound. Let us *see* what happens when sight is added. It still attracts and holds interest; however, the second factor, the imagination, is often diminished because greater detail has been added; but the third factor, retention of material, has been increased since a more forceful impression has been made on the mind. Therefore, in considering which form of media we shall use in a

given learning situation, we need but analyze the medium. Film-strips, made from television, will have a tremendously important part in teaching in the future, since they will be used to reiterate upon the mind, the important segments in the pattern making up a well-planned lesson.

Elements inherent in the *television* form of presentation are: (1) appeal to the emotions, (2) appeal by parallels to preconceived concepts already established in the mind, (3) appeal to the sense of enjoyment and pleasure associated with past experiences of a similar nature, (4) appeal by the suggestion of new concepts laid down in the fuller field of receptivity established by the first three conditions present in the television lesson. This new medium of education has a potential being sensed all over the civilized world.

As a communications medium, television is unique in its ability to bring many other aids into the classroom. Every audio and visual help we have ever known can be *carried* by television—motion pictures, film strips, slides (particularly to provide settings for dramatic productions) recordings, drawings, maps, and countless other instructional devices. Moreover, it gives schools the opportunity to present fresh, original, creative illustrations produced in the living present. The free element of *choice* is greatly increased when television is available.

This bulletin is the first presentation of factors being considered in a survey of educational television by the Office of Education, Federal Security Agency. It is hoped that it will prove helpful in a further discussion of this fast-moving development in American schools.

FRANKLIN DUNHAM,
Chief, Educational Uses of Radio-Television.

Ruth Prins telling a story over KINE-TV, Seattle

Produced by Gloria Chandler—TELAVENTURE TALES

PART I

Television in Our Schools

Part I. Television's Role in Education

NO OTHER single one of the technologic media of communication has ever received such widespread recognition as a potential instructional tool in so short a time as has television. Lantern-slide materials and then, motion pictures made great progress in the first quarter-century after their introduction into the schools. But it was only after the teaching film acquired its sound-track that it began to achieve a measure of acceptance at all commensurate with its true instructional potential. The phonograph fared somewhat better, inasmuch as it afforded the only means of access most schools had, prior to the advent of radio, to the world's great music professionally performed; but, even so, it has only been within the past dozen and a half years that it has been conceded to be a proper medium for types of instructional content other than music. Although educational institutions were numbered among the earliest licensees of radio broadcast stations, as recently as 10 years ago radio still found itself called on to back up its claims to instructional utility with research-evidence of its ability to promote learning. Yet, within the few short years since World War II, television has advanced from the status of an electronic novelty—"one of these scientific wonders of the post-war era"—to the position of a universally heralded medium of instruction.

Already, television receiving-sets are making their appearance in schools in practically every part of the country where television-broadcast stations are in operation, particularly, in those localities where part of the station's programing is aimed definitely at serving acknowledged instructional purposes, or where there is invited school participation in programs produced for home audiences. It would be a mistake, however, to assume from this that television receiving-sets have already become as commonplace in our schools as have conventional types of broadcast-utilization equipment—radio receiving sets, loudspeaker outlets of central sound systems, and disc and magnetic-tape recording and playing equipment used for "delayed listening." Nor does there appear, as yet, to be any uniformity as to types and screen sizes of television sets that are coming into classroom use. In the case of using teaching films, it has been rather generally agreed that

a 40-inch projection screen is the smallest size acceptable for classroom use. Yet, picture-tube sizes of TV receiving-sets being used for class-group viewing may be anywhere from 12 to 20 inches. This is the experimental stage of development.

As has been true with other types of teaching equipment, relatively little of the television-receiving equipment the schools are using seems to have been acquired through outright purchase with regular school funds. In some cases, the manager of a local TV broadcast station places a few sets in selected classrooms to give teachers of the local school system an opportunity to try out certain of the telecasts his station is offering as educational programs. In other instances, it is a local dealer or distributor of radio and television sets who loans a few sets for classroom use in an attempt to promote interest in exploring the educational potentialities of this new communications medium. Outright gifts from local merchants, public-spirited individuals, and civic organizations account for many of the television sets schools actually own. Parent-teacher organizations appear to be active, in many communities, in raising funds for the purchase of sets. Thus, it is impossible to arrive at any close estimate of the number of television sets in use in the schools, short of making a count of the sets actually in use in the schools. What really is significant here is that, whereas in the past, the average school has found it necessary to do a certain amount of planned promotion to organize public support for any proposed instructional innovation, today it appears that a substantial portion of the pressure for school use of television is coming from community service organizations, such as parent-teacher associations and local professional groups.

Appeal of Television

What is the reason for this? Past experience would tend to establish that community endorsement of the use of any new instructional medium is not likely to be forthcoming until its ability actually to facilitate learning has been amply demonstrated. Yet, in the case of television, there appears to be a universal disposition to consider its utility as an instructional tool to be self-evident. To some extent, no doubt, this attitude is a reflection of the general impact of television on the public as a whole—an impact that stems, in large measure, from the fact that television purports to be the one communications medium capable of making its audience actual eyewitness spectators of events in the process of happening. For the most part, however, this widespread public support for the use of television in the schools is probably an outgrowth of the exceptionally high appeal it appears to hold for young listeners.

To appreciate fully the magnitude of this appeal, it is necessary to consider two well-known principles of child psychology. In the first place, it must be remembered that spoken words are merely auditory

symbols that the people of any given language group employ, through common consent, to convey to one another the meanings they have derived from experience. It follows, then, that words have meaning for a given individual only insofar as his accumulation of antecedent experiences provide the necessary background for interpretation. Thus, radio can probably bring useful information to the average mature adult listener with a greater economy of time and effort than any other medium of communication, whereas young listeners, characteristically lacking sufficient breadth of experience to provide an adequate foundation of conceptual reference, may find a radio-broadcast presentation of factual or expository material little more than a procession of bewildering abstractions! This is especially true where visualization of size, structure, contour, color, arrangement, patterned movements, or manipulations in sequence are necessary to the full comprehension of what is described or explained. For types of instructional content of this nature, it is fairly obvious that verbal content must be complemented with visual content if it is to be maximally meaningful to children. It is this characteristic of the sound motion-picture—its ability to recreate both the visual and the auditory aspects of reality—that makes it so highly effective as an instructional medium.

However, there is yet another dimension to reality where the sound motion picture finds itself at somewhat of a disadvantage. The sound motion picture may, in effect, say: "This is what happened," "This is how it happened," "This is how it works," or "This is how to do it," but it can never presume to say: "This is happening now!" Radio, established in the public mind as an on-the-scene reporting medium, has shown itself particularly adept in this respect, despite its inability to convey the visual concomitants of real-life experience. On the occasion of the famous "Man from Mars" broadcast, adult listeners in some places were driven to a state bordering on hysteria by a radio dramatization of a mere work of fiction presented in newscast format, and, it is not unusual for radio listeners to write in to producers of daytime serials begging that appropriate action be taken to avert impending tragedy that is currently menacing the serial's hero or heroine! However, after seeing only a few motion-picture features, even the very young moviegoer learns that the sound film, realistic though it may seem, always pictures something that has already happened. Even the newsreels, he soon discovers, sometimes picture events that were headlined in the newspapers several days before. Though he may savor the full thrills-and-chills enjoyment potential of a serialized Western at the neighborhood movie theater, each successive installment is nothing more than just another chapter of a continued story. He is never under the illusion that the depicted action is taking place at the moment of his seeing it, or that the outcome hangs in the balance. "The people who made the picture," he knows, "already know

how it comes out." Neither radio nor the sound motion picture, then, is quite able, alone, to bring children the experience of eyewitness of-the-moment reality. Radio can *recall* actual visual experiences of the listener, but it cannot *create* visual actuality in the absence of the requisite antecedent experiences. The sound film, though free of this limitation, cannot achieve for its audience any sense of actually witnessing events in progress at the moment.

Television Has Few Limitations

Television suffers neither of these limitations. As a form of radio-broadcast transmission, it is capable of on-the-scene reporting of events while they are actually taking place. As a combination aural and visual communications medium, it can make its meanings clear to individuals of even limited background experience. However, television is more than simply a combination of radio and the sound motion picture. Whereas the sound motion picture is an excellent bisensory representation of reality, the live television broadcast becomes, in effect, an eyewitness look at reality in the process of actually happening.

Here, then, at last, is a mass-communications medium peculiarly suited to the full perceptive capacities and limitations of young people. Like the motion picture it combines the *sounds* of living reality (including verbal symbols) with the visual aspects of reality, thereby gaining the ability to convey meanings that have to do with mass and color and pattern arrangements and with time-motion-direction sequences—meanings difficult to communicate to young people through the use of verbal symbols alone. Moreover, except where it broadcasts films and other picture materials, it employs radio's magic of on-the-scene reporting of events in progress to achieve a sense of living reality on the part of its viewers. Admittedly, its picture quality is as yet, not equal to that of properly projected motion pictures in optical sharpness, tone gradations, and steadiness, and, to date, it has not usually been practicable to provide picture-size large enough for comfortable classroom viewing. Then, too, in comparison with "live" broadcasts over FM radio, tone quality over small speaker outlets sometimes leaves much to be desired. Nevertheless, the attitude of the average television enthusiast seems to be that even an optically perfect motion picture of an event that has already happened is frequently less satisfying than even a poor view of something that is actually happening at the moment, and that, with television, this feeling of eyewitness presence is already complete without any necessity for audio perfection. To quote a junior-high-school pupil whose attitude seems fairly typical of school-age children in cities that have TV stations:

> Radio is real enough. But you only hear what's happening. You've got to picture it for yourself. . . . A move is staged. They decide the story they want told, and then they just put in the things they need to put it across. . . With

television, it's different. We see the thing just the way it is happening. There's no chance for them to leave anything out, or to put anything in. We'd spot any funny business like that. So, when you see something on television, you know that's just the way it is.

Not only do children tend to take television somewhat more seriously than they do other communications media, but parents seem to be generally agreed that their children "learn lots from watching TV." Thus, even without any promotion on the part of the school, community support for the use of television in education is given.

Considered as an instructional medium, precisely what is television—"visual aid" or radio? Is it the radio-broadcast counterpart of the sound film, or is it "radio with pictures"? The teaching-films specialist might say it is the former. The educational broadcaster would consider it to be "just an improved version of what we've been doing for the past 30 years—broadcasting." To the classroom teacher long accustomed to using films, it seems at first to be something of an improved, self-projecting sound film that is ready for instant use at the flick of a switch, and which does not require rewinding and repacking films for return shipment on or before a specified penalty deadline. To the teacher already using radio systematically, it is "radio with built-in illustrative materials." All agree on one point, namely, that school use of television should make it possible to take much of the "required course-of-study content" out of the realm of academic abstraction, and invest it with the attributes of living reality.

Interestingly enough, however, teachers usually discover, when they start using television programs with their classes, that even this newest of mass communications media is not wholly without its limitations. True enough, teachers accustomed to using films find that they can turn a television program on or off without all the chores involved in using films, but it comes as something of a surprise that, as in the case of using "live" radio broadcasts, each program has to be used at the time it is on the air, rather than at the particular time the class group is ready for it, and that the teacher does not have an opportunity to preview a program before showing it to the class group. More serious still, they find that a television program cannot be stopped for questions or class discussion and resumed again from that point as can be done when using projection materials and recordings. Teachers accustomed to using radio find it somewhat easier to adjust to the use of television programs, since they have long been familiar with schedule matching limitation of broadcast media. As a consequence, most of them tend to regard the educational potentialities of television rather highly.

Considered from the standpoint of program production, television seems closely related to the sound motion picture. Certainly its end product—the picture that appears on the screen of the viewing tube—is not unlike what appears on the screen in the case of the sound motion picture.

Moreover, television broadcasting makes liberal use of sound motion-picture films and, in its "live" broadcasts, it employs many of the camera techniques of film making. However, with "live" television programing, camera pickup must proceed continuously from the start of a broadcast to its conclusion. There is no opportunity, as there is in film production, to produce a show one scene at a time, previewing the film of each scene before starting production of the next one, and doing "retakes" wherever desirable. Neither is there any opportunity to edit out portions of a show in process of being telecast, or to add to action sequences. Production of "live" television broadcasts is subject to the same exacting requirements as the production of "live" radio broadcasts. Thus, it appears that educational specialists experienced in producing educational radio programs must, at least in the initial stages of educational TV program development, be prepared to undertake the major portion of the responsibility for "live-broadcast" programing, borrowing liberally from the experience of professional teaching films producers for the staging and camera techniques needed to supplement their aural broadcasting "know-how."

Perhaps, then, the question of whether considered as a medium of instruction, television is properly to be classified as a "visual aid" or as "radio" is academic. As has been pointed out already, it offers certain of the advantages claimed for the sound motion picture, and certain of those claimed for radio. Similarly, it suffers certain of the limitations identified with each. An attempt to fit it into either one or the other of these two categories might even have the effect of limiting television's potential usefulness in the schools.

More Than a Visual Aid

Television then is *neither* visual aid *nor* radio—as an instructional medium, it is independent of both. Selection of the instructional medium to be applied in any particular instance, then, becomes a matter of comparing the three with respect to how well the unique advantages and limitations of each fits the conditions under which any given teaching job must be done. Thus, the *primary emphasis* is on the *teaching purpose*, rather than on instructional media, themselves. Instead of the attitude, "Lucky me, to have such a powerful instructional medium at my command! Wonder what I can use it for today?" the teacher's orientation becomes one of: "This is the specific instructional job that has to be done! Which one or ones of the instructional media immediately at my disposal will enable me to accomplish it with the greatest dispatch?" This does not mean that active identification with the work of any one of the established instructional-media organizations is to be discouraged. On the contrary, it must be said that it is largely due to the careful and methodical work of such professional groups that these instructional media

have been brought to their present stage of development. It is especially important, however, that the individual classroom teacher, instead of limiting himself to mastery of any one single medium, undertake to acquire a working knowledge of *all* of them.

Finally, educators would be well advised not to make the mistake of underrating television's educational potentialities. True enough, it is still a relatively new medium, but there is a steadily mounting accumulation of evidence that it can and does serve worth-while educational applications. Teachers who have used television programs with their class groups report marked improvement in attention, and better-than-average retention of program content. Other teachers who use home TV-program viewing (either voluntary viewing or assigned viewing) as a basis for class-group discussion and analysis invariably report improvement in interest. Most reports of television-program use claim a noticeable increase in eagerness, on the part of students, to participate actively in group discussion and analysis of topics of current interest.

These effects might be accounted for, in part at least, by the attention-compelling novelty appeal of television. It is possible, also, that part of this apparent effectiveness of television in stimulating intellectual curiosity of students might be explained on the hypothesis that teachers, by virtue of their believing television to be an exceptionally powerful instructional medium, tend, unconsciously, to expend the extra amount of effort needed to get superior results. Be that as it may, there can be little doubt that television is already exerting a powerful influence on public thinking in relation to education. Children, already accustomed to viewing television at home, tend to look upon its use in school as an *extension* of one of the more pleasurable aspects of their out-of-school world, and, in consequence, come to like school better. Hence, they tend to do better work, to make better marks, and, finally, to become more facile in telling, at home, what they have learned at school. The final link in our self-perpetuating circuit of cause-effect sequences, of course, is that parents, gratified at being able at long last, to get some tangible indication as to what their children are learning at school, and assuming, since these reported learning experiences are often linked up with television viewing, that television is the all-important tool teachers need in order to make their work maximally effective, become all the more eager that their schools use television.

PART 2

Part II. What Schools and Colleges Can Do With TV

ANY ATTEMPT to trace the usual course by which the use of television comes to be established as an integral part of the over-all instructional program of a school system or college must consider it from two separate standpoints—that of instructional uses of television programs believed to possess educational significance, and that of production of television programs aimed at serving specific educational purposes.

Use of Television Programs

Usually, school use of television programs begins informally with class-group discussion of the programs children see during out-of-school hours. In some instances, the teacher encourages such discussions in an attempt to identify any newly awakened interests that can be used as the basis for class projects and units of study. In others, the teacher is interested in discovering whether or not the pupils have acquired any new understandings that can be applied to class work currently in progress to supplement conventional types of instructional materials. In still others, the spontaneous interests of pupils in discussing their out-of-school television viewing is utilized as a convenient means of access to clues as to individual and group motivations. In some instances, teachers use these discussions of television programs as an opportunity for helping young people to examine, compare, and evaluate the ways in which they are being affected by this aspect of their every-day environment. All of these have one thing in common: they utilize out-of-school program viewing that is entirely voluntary on the part of children.

Very early in the course of using television, however, this type of television program use gives way to a somewhat-more-systematic type where the class-group discussions are based on planned out-of-school viewing. In some cases, the study assignment given a class may include questions concerning topics with which it is expected forthcoming telecasts will treat. In others, pupils are advised to watch forthcoming

telecasts for any information or commentary on specified topics. Instances have even been reported where out-of-school television-program viewing has been assigned as homework.

Finally, as the teachers in a given locality develop effective instructional techniques for use with television programs, and as television programs designed to serve specific instructional purposes become available locally, a more advanced type of television-program use gradually evolves, where complete instructional routine to be used in any given subject area and at any given grade level is planned specifically to fit a particular program or program series, in much the same way as has been done in the past with respect to radio programs.

Teachers who have had an opportunity to use television programs with their classes invariably comment on the effect which viewing such programs appears to have in encouraging spontaneous class-group discussion. In the past, teachers have found it difficult to draw some pupils into group discussions; today they report that every member of a class group is eager to "tell what he saw on television" and to express his reactions to it. The appeal which television holds for young people even well upward in the junior high school grades, is so great that simply making a conventional rote-learning drill into a simulated telecast can often "work magic" in relation to the mastery of required subject content.

Precisely how far into the future this novelty appeal of television will continue to be an effective factor in motivating the learning efforts of young people, nobody can say. Certainly, some decline in its motivating power is to be expected. Fortunately, however, the claims for television's educational utility do not rest on this basis, alone. Already, television has amply demonstrated its ability to provide certain types of worthwhile instructional content not readily available from any other single source. This is especially true in the case of public events which offer exceptionally high of-the-moment educational potential, but the continuing value of which appears insufficient to warrant the expense of filming them. Some of these, of course, can be reported adequately by radio. (In fact, it is here that radio has made one of its greatest contributions.) In other instances, radio would be inadequate because important visual aspects necessary to the ready comprehension of the event cannot be translated convincingly into words and non-verbal sound. For reporting events of this nature, television has shown itself to be without equal.

For certain types of content, television has been found to be more effective than any other single communications medium. For example, in the case of telecasts in which persons prominent in public life are participants, the individual viewer is able not only to follow their respective "officially stated" opinions of the moment; he can watch their facial expressions and their gestures—note momentary tensing of facial

muscles that suggests the participant is finding one of the interview questions a bit embarrassing, or observe the participant's consequent relaxing which suggests that a delicate question has been parried successfully. To be able to watch these spontaneous, unrehearsed physical cues to inner tensions while following what is being said gives the viewer a much wider basis, both for judging the speaker's sincerity and for evaluating the substance of what he says, than is afforded by any other communications medium. For certain types of program content, then, it would seem that television can do something more than to make the individual viewer an eye-witness spectator of events that are happening at the moment. It can give him the feeling of being able to "see into people's minds", as though he were physically present at the scene of action—in some instances, perhaps even better than if he were physically present, since the cameraman, in effect, points out to him the person to watch at any given instant. In short, the viewer gets something of the feeling of being an actual participant.

It is perhaps a bit too early, as yet, to undertake any systematic application of quantitative measurements with respect to television's apparent effects on young people. Much still remains to be done by way of simply identifying its qualitative effects. However, enough progress has been made in the school use of television programs to convince educators, generally, of television's educational potential, and to suggest a number of different areas of planned school experience where experimental television programing might profitably be undertaken.

Production of Television Programs

Actual participation by professional educators in the production of television programs usually starts when the program director of a local commercial television-broadcast station, looking for new sources of material for public-interest and public-service programs, invites individual members of the local school-system or college faculty to appear on a television program (or series of programs) dealing with some aspect of education. In some cases, for example, a series of talks is scheduled, each dealing with a topic lying within the field of specialization of a different instructor. In others, an entire program series is developed around the subject-area interests of a single instructor noted for his showmanly manner of presentation. Teachers known to be quickly reactive in oral argumentation are favorites for participation in panel-discussion telecasts, and specialists in the fields of economics, history, and political science rank high on the station's "invited expert" list for telecasts calling for commentary on public events. Sometimes a teacher is asked to appear with an actual class group to demonstrate the use of a particular

The way television looks to the engineer in the control room
(WOI-TV—Iowa State College)

instructional procedure (e. g., analysis of pupils out-of-school television listening preferences as a starting point for building program discrimination). Music and dramatics groups are always in demand for television performances.

Generally speaking, then, this initial phase of school participation in television broadcasting over local commercial stations exhibits three identifying characteristics. *First*, there appears to be relatively little participation by local school personnel in the actual long-term planning of the programs. Instead, it is usually the station's program director who decides, for each school-participation program, what aspect of education or of local school work would be best suited to audience interests of the moment. *Second*, there appears to be little or no effort to select topics for these programs that follow one another in any logical order, except in the case of program series of the type where a single instructor appears in all programs of the series. *Third*, there is a tendency to avoid producing programs based on routine classwork, and, instead, to build programs around aspects of schoolwork that are picturesque or unusual, or that lend themselves to dramatic elaboration. Fortunately, programs of these kinds appear to have a relatively high public-relations value both for the participating educational institution and for the broadcast station. The school system or college, on the one hand, is credited with having demonstrated its alertness to the educational opportunities afforded by this newest of mass-communications media, while, on the other hand, the broadcaster is applauded for his civic-mindedness in making station time available for use by the schools. In recognition of the mutual advantages

to be gained from such cooperative arrangements, it is only natural that the station management invite the local school system or college to share in the production of one or more regular series of educational television programs, assigning certain of its faculty personnel to work with the station's production staff in planning and producing the programs. Thus the second phase of school participation in television broadcasting begins.

This second phase differs from the first in two important respects. *First*, although the station management is still interested in keeping to program topics of the widest possible public interest, the programs take on a definitely recognizable educational pattern. Whereas, at first, they appeared to be aimed primarily at public entertainment, in this second phase, each program is seen to be built around a central educational purpose, and, in the case of program series, there is a discernible pattern of logical progression from one program to the next. *Second*, although programing-policy decisions are still considered to rest with the station's management and staff, school personnel do function in an advisory capacity, so far as selecting the content to be broadcast is concerned, and they participate directly in all aspects of program production from assisting in the writing of the scripts to serving as members of the program cast. It is on the basis of cooperative programing arrangements of this kind that most of the educational television programs now on the air are being produced. In a number of cities, programs intended for planned home viewing and subsequent in-school discussion and analysis are produced. In some instances, programs designed for in-school class-group viewing are produced. In most instances, programs aimed at popularizing topics of acknowledged educational significance are produced for adult audiences.

School Interest in Owning TV Broadcast Stations

To date, the course of development seen in these cooperative arrangements in educational television programing closely parallels the course taken, in the early days of aural broadcasting—participation by school systems and colleges in educational-program production over local commercial radio stations. Indeed, much of the credit for encouraging wide use of radio at the local-school level is due to the generosity of the local radio broadcasters in making station time available for use by the schools, and in making the services of their production staffs available to assist in producing the programs.

However, in the case of sound broadcasting, it was found that, as teachers developed effective instructional techniques for using educational radio programs, they soon came to recognize a need for programs of a more specific nature designed to serve definite instructional objectives—programs of a type, for the most part, which, because of their specialized

audience appeal, many commercial broadcasters felt they could not afford to broadcast lest they lose a substantial portion of their respective listening audiences to competitive stations. Moreover, schools invariably found they needed more air time for their programing than local commercial stations felt they could make available. Still more serious from the standpoint of the schools, in a great many cases, was the fact that the school would no sooner have an educational program established at a particular time of day than an advertising sponsor bought that particular time, and the station moved the educational program to a new air time. Thus, with the growth of the school use of radio, educators came to feel, increasingly, that, in order to (1) be sure of enough air time for their programming needs, (2) be able to control their programing policies, and (3) be able to schedule programs for maximum convenience to the school and home listeners for whom they might be intended, educational institutions would need to develop their own stations.

Looking back over these experiences in the field of sound broadcasting, many educators are inclined to feel that, at the rate school interest in television broadcasting is growing, it is inevitable that a point will soon be reached where educational institutions will need to have their own television-broadcast stations.

Considering that it costs about 10 times as much to construct and to operate a television-broadcast station, as it does to construct and to operate an FM broadcast station of the same coverage-area capacity, it might seem unrealistic to think that school ownership and operation of television-broadcast stations is practicable. Realistic or not, there is a substantial and widespread interest on the part of educational institutions in building such stations, as will be shown in part III of this bulletin. At the portion of the recent television rule-making hearings before the Federal C..nmunications Commission which dealt with question of setting aside television-broadcast frequency assignments exclusively for educational use, officially designated spokesmen representing every Nation-wide professional educational organization, every class and academic level of educational institution, and most of the major academic areas unanimously recommended that such television frequency reservations be made.

Already, one of the major State universities is operating its own television station, and at least a dozen other institutions of higher learning are known to be in the advanced stages of television station planning. Precisely how long it will be until educational television broadcast stations become as common as educational aural broadcast stations, it would be difficult to estimate. One thing is fairly certain, however: the trend toward educational television broadcasting by school systems and colleges is definitely under way.

PART 3

Part III. Current Uses of TV by Our Schools

ANY ANALYSIS of television in America, as we now see it, quickly points out its advantages over other media of communication and its immediate shortcomings. The great educational value of radio always had to be divided into its uses for general education in its largest sense, public information, and then in its more specific use within the school and classroom—education per se.

Radio has the power to (1) attract and hold interest, (2) stir and stimulate the imagination, and (3) aid in retentiveness of the ideas presented. How does it do this? It does it by (1) forcing attention by appealing to a single sense, that of hearing; (2) subtly using sound effects, music, dramatic suspense, and pause to create mental imagery; and (3) reiterating over and over the content of the message to be remembered. These powers are *inherent* in sound broadcasting, whether radio is used to entertain, inform, instruct, or merely to provide a means of mental escape. When Shakespeare broadcast to his audience in the old Globe Theatre in London he used all these "tricks of the trade." He often used "commotion" off stage to suggest action and "alarums" to create arrested attention in his audience. He depended little upon stage "props" to get his effects. Thus, he involved his audience so completely in the action of his plays that they themselves, became, literally, a part of the drama itself. That is why he is such good radio today.

But Shakespeare had the additional medium of sight with which to conjure. So he dressed his players up in appropriate costumes and valiantly attempted to make their action "suit the words." The point is—he used sight as an *additional* ingredient of his effects and he often dispensed with it, when he presented an empty stage, or balcony above it.

Teachers can learn a great deal from Shakespeare. Not only in his arrangement of material in his discourses, but also in his *timing* of effects. If he were living today, he would be what television is praying for, the one man who could effectively use it toward a desired end in education, or, in other words, in effectively transmitting ideas. Shakespeare would have been the greatest producer in television. Of course, this would help,

our English teachers, gain the approval of all teachers of the social studies, get applause from the music department, nothing less than adoration from speech and drama departments, and a nod of quick adoption into the curriculum of all his contemporary works, by principals and superintendents. We have given a fair presentation of radio by sound and now we analyze television. Sight has first place in our consideration of television because *we already know what sound alone can do.* There is no essential difference in what either one can do, or both together, in education. That concept would set education apart from life—this we cannot accept.

However, there is a great difference in what each component in these media may do as a *means* of accomplishing the purpose to which all are put. There is, unfortunately, no basic research available today to guide us in such evaluation. Therefore, we must use the results of our limited experiences to make such judgments.

In the classroom, and in out-of-school listening time as well, we have many illustrations of what television can accomplish. In Chicago, Philadelphia, New York, Baltimore, Cleveland, Detroit, St. Louis, San Francisco, Los Angeles, Minneapolis, Boston; and at university centers like Ames (Iowa State), the University of Iowa, Creighton University (Omaha), State College (Manhattan, Kans.), Syracuse, Purdue, Columbia, Yale, University of North Carolina, Indiana University, University of California, University of Miami, Texas, Oklahoma, and many others, a great deal of experimentation has already taken place. Many television programs are now regularly scheduled by these city school systems and by these universities and colleges.

The Philadelphia Experiment

Philadelphia, under the direction of Allen H. Wetter, assistant superintendent of schools, has been a leader in this development among schools; New York, Baltimore, and Chicago are surely close runners-up to Philadelphia, which in studying the medium has 16 regular weekly programs produced over 3 television channels in the city today. One reason, no doubt, has been its proximity to the manufacturing centers of television in this city and in nearby Camden.

Our purpose here, however, is to point up the *comparative* values residing in television, radio, and other modern media of instruction. After many years of experience in producing radio programs, there has yet to be discovered a way in which sound alone can teach a skill *without* the use of a visual aid. First experiments in such a use of radio was in teaching six elementary lessons in piano over NBC in 1930. NBC sent out more than half a million paper keyboards to accomplish this purpose. Several hundred thousand pupils personally went on to teachers for their seventh lesson when this series ended.

Elementary science, without demonstration, is a good example of adroitly setting up "pictures in the mind" by sound. Dr. Harry Carpenter did it with a measure of success in Rochester many years ago. We accomplished just about the same results with other series about the same time (around 1936). But now, with television, we can actually *show*, and in the living present demonstrate, with all the suspense that actual laboratory experiments carry, the results of simple tests in the field of both physics and chemistry. An example of this was shown at the School Broadcast Conference in Chicago in October 1949, when the Vericon System of telecasting picked up such a demonstration from the platform and transmitted it to television receivers in full view of the audience. We could not have accomplished this result by sound alone, nor could sound motion pictures or even kinescoped film, taken at that time, produce the interest which is stimulated *by being present* at an actual demonstration. To the teacher's voice was added movement observed by sight, and in his expert placing of the apparatus to be televised and in his manipulation of it we had *thought* synchronized with demonstration. Perfect communication!

Philadelphia Public Schools have adopted three guiding principles in the use of television which sensibly delimit the area of experimentation and at the same time allow for ample application of the new medium to present thinking within the problem involved:

1. To produce telecasts which would provide materials, personalities, and skills that otherwise would be unavailable to the classroom.
2. To feature unusual projects or techniques under way in a few schools, in order to encourage other teachers and classes to undertake similar projects.
3. To encourage the use of television in the classroom when history-making events are televised such as the signing of the Atlantic Pact and the inauguration of the President. This type of television programing will increase.

Television Schedule

PHILADELPHIA PUBLIC SCHOOLS

Under the direction of Martha Gable

TYPICAL 1952 LISTING

OPERATION BLACKBOARD—WPTZ

R FOR 'RITHMETIC—WPTZ

School Producer—Virginia Sheller

R for 'Rithmetic is a series of programs intended to supplement teaching techniques suggested by *The Arithmetic Guide*. The content of the lessons is material assigned to the THIRD GRADE. Various concrete and pictorial materials will be used. The lessons are planned to motivate pupils in their daily work, and to acquaint parents with new methods in teaching number.

Monday, May 5, 10–10:30 a. m. Multiplying Tens and Tens and Ones. We shall suggest solutions for a problem, see that multiplication is a short way of adding, and use the multiplication process with and without carrying a ten.

Monday, May 12, 10–10:15 a. m. Division. We shall work with materials to discover the meaning of the "sharing idea" in division and learn how to use the algorism.

Monday, May 12, 10:15–10:30 a. m. R for Reading. Use of visual materials at third grade level.

Monday, May 19, 10–10:30 a. m. Counting by Multiples. Counting by groups provides for progression in thinking and saves time. We shall develop "the three table" and study the relationship involved.

Monday, May 26, 10–10:30 a. m. Measuring Time. We shall travel briefly the development of "Time" down through the centuries that resulted in our own devices for measuring time: the clock and the calendar.

Everyone's an Artist—WPTZ

School Producer—Josephine D'Onofrio

This series of programs in creative arts for 4th, 5th, and 6th grades provides veiwers with basic techniques and processes for original, individual work. It is supervised by the Division of Fine and Industrial Arts. Please remember that in presenting these lessons within the limits of a half hour, we must necessarily telescope many steps which would require much more time and discussion in the classroom.

Tuesday, May 6, 10–10:30 a. m. Inspiration for Design. The inspiration for art work is all around us, but sometimes we don't recognise it. What *is* inspiration, where do you find it, and when you find it, to what use can you put it? Perhaps you'll get some new design ideas from this program.

Tuesday, May 13, 10–10:30 a. m. Drawing Animals. Our program on figure drawing brought some good "results." Today's lesson will help us to put four legged creatures in our pictures.

Tuesday, May 20, 10–10:30 a. m. More Design. We'll work freely and brilliantly on discarded lengths of corrugated paper which we'll apply to a number of attractive useful articles.

Tuesday May 27, 10–10:30 a. m. Everyone's An artist! On our final program the homebound children substantiate our claim that "Everyone's an Artist!"

Exploring the Fine Arts—WPTZ

School Producer—Abner A. Miller

This series is planned for upper elementary and secondary school pupils.

Wednesday, May 7, 10–10:30 a. m. Modern treasures of art from the Philadelphia Art Museum. Mr. Henry Clifford, Curator of Paintings, and guests will consider masterpieces from Modern French and other Twentieth Century Painting.

Wednesday, May 14, 10–10:30 a. m. Remote telecast from Dobbins Voc.-Tech. School on technical courses to prepare for jobs. (Part of "Inside Our Schools" promoted by Life Magazine.)

Wednesday, May 21, 10–10:30 a. m. Dramatic scenes from "Macbeth" will be presented by Miss Rene O'Loughlin, who enjoys an enviable reputation with her fellow English teachers at Overbrook High and elsewhere.

Wednesday, May 28, 10–10:30 a. m. Mr. Joseph T. Fraser, Jr., Director of the Pennsylvania Academy of the Fine Arts, and guests will show and discuss distinguished examples of American printing and sculpture from the permanent collection of the Academy. These works date from the early Eighteenth Century down to the present.

The World at Your Door—WPTZ

School Producer—Abner A. Miller

Moderator—Dr. W. Rex Crawford

Dr. Crawford will discuss problems of education, government, military service, industry and agriculture with guests from other lands. Music and art of the country are introduced when available.

Thursday, May 1, 10–10:30 a. m. Norway. Leif Longun takes us on a visit to the Land of the Midnight Sun. Mr. Longun will give us the insider's view of how his country is facing the problems of the day. Costumed folk singers and dancers will supplement the interview.

Thursday, May 8, 10–10:30 a. m. Ceylon. This happy island and its products from tea to the Colombo Agreement will be discussed by Dr. M. J. P. de Silva and Mr. C. M. Linus Silva.

Thursday, May 15, 10–10:30 a. m. Remote telecast from Dobbins Voc.-Tech. School on health services. (Part of "Inside Our Schools" promoted by Life Magazine).

Thursday, May 22, 10–10:30 a. m. Japan. With the theme—Japan enters the family of democratic nations—the program will assess Japan's strides towards democracy. A ranking Japanese diplomat will be interviewed. The results of several junior high projects on Japan will figure in the telecast, which is produced in cooperation with the World Affairs Council.

Thursday, May 29, 10–10:30 a. m. Thailand. Dr. Mana Boonkanphol will bring the prosperous country of "The King and I" down to date.

How's Your Social I. Q.?—WPTZ

School Producer and Mistress of Ceremonies—Gertrude Novak

Teen-age manners and social problems are discussed with outstanding guest experts.

Friday, May 2, 10–10:30 a. m. Dr. Roy K. Marshall visits the YSIQ Club to discuss with its members the problem of traveling etiquette. Packing, transportation, what to wear, what to tip, how to behave while traveling—all come in for particular attention on our program—LET'S GO!

Friday, May 9, 10–10:30 a. m. Femcee Gertrude Novak and students discuss with an art expert the matter of behavior at art exhibits. Brief dramatic sketches will be presented illustrating the do's and don'ts of art patrons and art viewers. Art work as well as ART MANNERS will be on display.

Friday, May 16, 10–10:30 a. m. Program on services for the handicapped. (Part of "Inside Our Schools" promoted by Life Magazine.)

Friday, May 23, 10–10:30 a. m. During one's school years, many hours are spent in the assembly hall, listening to speeches and lectures, watching movies and attending various programs. Do you display the same good manners here that you display in a public theater? Harry Kaufman of Dairy Council discusses ASSEMBLY MANNERS.

Friday, May 30. Holiday.

It's a Problem—WPTZ

Mondays, Tuesdays, and Fridays, 11:30 a. m.

WFIL School House—WFIL-TV

These programs are produced by the Radio-Television Staff of the Philadelphia Public Schools under the supervision of Dr. Roy K. Marshall, Educational Director of WFIL, WFIL-TV and with the cooperation of the Temple University Radio-Television Workshop under the direction of Dr. John Roberts.

Delaware Edition of the Pennsylvania Pageant

School Producer—Kathryn F. Bovaird

The historical, cultural and industrial story of Delaware will be presented in this series for upper elementary and junior high grades.

Tuesday, May 6, 9:30–9:45 a. m. Delaware—The "Blue Hen" State. Do you like fried chicken? Then thank the State of Delaware. The folks down there really raise good chickens. Let us show you how it's done. We'll have real live chicks—broilers—and all the trimmings. If you want to know how to raise chickens this is your chance to find out. Mr. E. Luke Matz of the Alexis I. Dupont High School, accompanied by two experts—one a member of the University of Delaware's Agricultural Extension Staff—the other their dietitian and two students will present this program.

Tuesday, May 13, 9:20–9:45 a. m. More Historical Highlights. Have you ever heard of Caesar Rodney's ride? Would you know the flag of the State of Delaware? Did you ever stop to think that "little" Delaware became "mighty" Delaware when she ratified the Constitution first? Let Mr. William P. Frank, columnist of the Morning News, Wilmington's wideawake paper, tell you the answers to those questions.

Tuesday, May 20, 10–10:30 a. m. Chemistry Works for You. The wonders of chemistry that show up in real every day living and make life safer, more beautiful and ever more functional will be the topic for this program. It will be under the direction of Dr. George R. Seidel of the Du Pont Company. Dr. Seidel and his associates will appear on the program.

Tuesday, May 27, 10–10:30 a. m. Our Special Production. We want you to know Mr. Louis Kaase—composer, musician and a teacher at Overbrook High School. Mr. Kaase has written a lovely collection of pieces for children. An artist illustrated the book about the musical pictures of birds, lions, monkeys and other animals. Dancers will interpret these selections. This is a gala occasion—our last program. Don't miss it!

Science Is Fun—WFIL-TV

School Producer—Bess Barg

The Franklin Institute, Academy of Natural Sciences, University Museum and other similar agencies will provide our classrooms with fascinating material by top-flight personnel. This series is planned for upper elementary and junior high grades.

Wednesday, May 7, 9:20–9:45 a. m. Interplanetary Travel III. Continuation of discussion and demonstration of interplanetary travel—exploration of the planets and the moon; hazards of space travel; urgency of the need for space travel; implications for war and peace.

Wednesday, May 14, 9:20–9:45 a. m. Science Fair Winners. Mrs. Gloria Gossling, Educational Director of the Franklin Institute, together with some of the winners of the Science Fair—sponsored by the Franklin Institute in cooperation with the Philadelphia Inquirer—will tell about and demonstrate the prize winning exhibits.

Wednesday, May 21, 10–10:30 a. m. Unseen Worlds. Mr. Harold Bernhardt of Temple University will show the world under the microscope—hydra feeding; paramecia feeding; yeast growing; how the planeria gets around.

Wednesday, May 28, 10–10:30 a. m. Science Fun For Vacation Days. Mr. Albert Stiede, science teacher at the Clymer School, will demonstrate science activities for summer days.

Storytime—WFIL-TV

Public School Producer—Gertrude Novak

Philadelphia Diocesan School System

These Language Arts programs are planned for fourth, fifth, and sixth grades. A teacher from the Diocesan Schools, with picture illustrations, will tell stories for little people and then discuss the story with the children. Miss Novak conducts a quiz program built on questions, objects and episodes taken from children's stories. Guest authors will appear on the program to discuss their books.

Thursday, May 1, 9:20–9:45 a. m. Quiz of children's science fiction stories with Gertrude Novak. A panel of Quizperts from the Philadelphia public, private and parochial schools test their story-book know-how with questions, pictures and scenes from stories that are "out of this world."

Thursday, May 8, 9:20–9:45 a. m. A charming folk tale about life of the French Canadians—presented by the Diocesan Schools.

Thursday, May 15, 9:20–9:45 a. m. Gertrude Novak introduces a puppet named WISSY. A panel of Quizperts will try their luck at building a story about WISSY. They will answer questions about stories other people have written. An author will visit.

Thursday, May 22, 10–10:30 a. m. A charming folk tale about Old England—presented by the Diocesan Schools.

Thursday, May 29, 10–10:30 a. m. Our final quiz of the season will feature time-tested favorites. A panel of Quizperts will be asked about and will tell about stories everybody knows and loves.

Stop, Look and Learn—WCAU-TV

This series is designed to answer a variety of needs for the classroom and home viewing. Any requests for programs on specific subjects will be included. These programs are under the general direction of Margaret M. Kearney, Educational Director of WCAU-TV.

By Request—WCAU-TV

Producer—Virginia Sheller

Monday, May 5, 3:15–3:30 p. m. Playing the Flute. Helen Lee and pupils from her class at the Fell School will discuss and illustrate techniques of playing the flute. They will demonstrate their own progress by playing solo, unison and part music.

Monday, May 12, 3:15–3:30 p. m. Beginning Square Dancing. Mr. Jacob Geiger, Physical Education Supervisor, will teach individual figures and square dances to children of a fifth grade class.

Monday, May 19, 3:15–3:30 p. m. Advanced Square Dancing. Girls and boys of a sixth grade class will demonstrate more difficult dances under the guidance of Mr. Geiger.

Monday, May 26, 3:15–3:30 p. m. Correct Usage. A teacher and some of her pupils from Collingswood, N. J., will show how they are attempting to improve their speech.

At Your Service—WCAU-TV

Producer—Bruce Jacobs

Tuesday, May 6, 3:15–3:30 p. m. Service for the Hard of Hearing. Serena Foley Davis, principal of the Martin School will show some of the many ways in which children suffering from a loss of hearing are cared for educationally. Demonstration of instructional techniques will be shown.

Tuesday, May 13, 3:15–3:30 p. m. Library Services. We shall show some of the ways in which the elementary, secondary, and professional libraries are kept up to date. The functions and purposes of the different types of libraries will be discussed and illustrated.

Tuesday, May 20 3:15–3:30 p. m. Safety Education. We shall demonstrate the services rendered by the Division of Safety Education. The School Safety Patrol and several other phases of the safety program will be shown.

Tuesday, May 27, 3:15–3:30 p. m. Music Services. Members of the Division of Music Education will demonstrate talent testing in the elementary schools and the development of small school orchestras.

The Time of Your Life—WCAU-TV

Wednesdays, 8:45–9 a. m. New Hobbies and interests for adults.

Your Picture Window—WCAU-TV

Producer—Father Anthony Ostheimer, Roman Catholic High School

Americans All

Each week will be featured a quis on American Events and history.

Thursday, May 1, 8:45–9 a. m. American Quotations with Sister Joseph Marie.

Thursday, May 8, 8:45–9 a. m. Travel in America with Reverend Gerard Nolan.

Thursday, May 15, 8:45–9 a. m. American Writers with Sister Rosalie Marie.

Thursday, May 22, 8:45–9 a. m. Famous Philadelphians with Brother David Peter from West Philadelphia Catholic High School for Boys.

Thursday, May 29, 8:45–9 a. m. American Orators with Reverend James J. Murphy from Roman Catholic High School for Boys.

Presidential Timber—WCAU-TV

Fridays, 10–10:30 a. m. Interviews of presidential candidates.

University of the Air—WFIL-TV

This program is planned for adult education. However, the following programs are suggested for classroom use.

Great Figures in English and American Literature—Ursinus College, Monday, May 5 and 12, 11:10–11:30 a. m.

Human Relations in Industry—Drexel Institute, Monday, May 5 and 12, 11:30–12 noon.

The Newer Horizons in Public Health—Philadelphia College of Pharmacy and Science, Tuesday, May 6 and 13, 11:10–11:30 a. m.

Mass Communications—Temple University, Tuesday, May 6 and 13, 11:30–12 noon.
Human Values—Father Edward Gannon, St. Joseph's College, Wednesday, May 7 and 14, 11:10–11:30 a. m.
Fine Arts—"You Should Know What You Like"—Lehigh University, Wednesday, May 7 and 14, 11:30–12 noon.
Chemistry—"The Foods We Eat"—Pennsylvania Military College, Thursday, May 1–8 and 15, 11:10–11:30 a. m.

FACE THE MUSIC—WFIL-TV

Producer—Emeline Weakley

Thursday, May 1, 11:30–12 noon. Spring Concert. By Music Education Students from West Chester State Teachers' College. Selections, instrumental and vocal, will be chosen from the annual individual recitals.

Thursday, May 8, 11:30–12 noon. Hawaiian Music for Music Week. Joy Valderrama, Temple University and her sister, Grace, West Philadelphia High School, will demonstrate ancient native instruments, explain and illustrate ritual chants and interpret modern hula with its pantomime hand movements.

Thursday, May 15, 11:30–12 noon. Folk Songs From Work, From Play, From Prayer. Plain ballads from America and other countries will be used to show how songs grew out of work; were a means of relaxation at country play-parties; served as religious inspiration; and formed a folk-dance rhythmic basis for greater compositions. Ruth Luty, pianist; Richard Price, baritone; Emeline Weakley, with guitar; and a dance group will perform on this concluding program of music appreciation.

It is evident that a translation from sound broadcasting is taking place in much of this thinking and, at the same time, the values of motion-picture techniques are being definitely considered as well. The next step, no doubt, will be to consider television in terms of the changes it is bringing about in teaching procedures.

Teaching Procedures

Two programs telecast in Philadelphia are examples of what is being accomplished. These programs were on Wednesdays and Thursdays at 11 a. m. The first, THE WORLD AT YOUR DOOR, was a high-school student interview of an interesting person from a foreign country. In this program a personable young man and equally attractive young lady interviewed a lady from Iraq, who is a graduate student at the University of Pennsylvania. She described her country, showed its location and principal industries and agriculture on the blackboard, and then showed its art products, tapestries, silver and copper ware, jewelry, and other handicrafts. She was in native costume, too, which she subsequently described with all its relation to custom and folk-tradition of her people. A good program! Could it have been adequately done by sound alone? No! Could it have been done by motion pictures? Yes, but at great expense and with no particular value for library distribution. The *current* nature of this telecast seemed to justify its use at once for the social studies in high schools. It also had, of course, wide appeal to a general cultured audience. In fact, the repartee made it a good show for any audience, of

any age level. On this program "How is your Social IQ?" followed immediately. Here the vocational adviser in the schools along with Gertrude Novak as M. C. interviewed girls, who acted the parts well, on the correct and incorrect manner of applying for a job as stenographer. The "incorrect" was a perfect comedy role, which lent the proper comic relief to the whole presentation. Could it have been done by sound alone? No! Could it have been done by motion pictures? Yes, but not with the local talent, presumably known to the audience and the local situations, which made it en rapport to the audience; or, if it were photographed as it stood, at a great expense to the schools. Its vitality again consisted of the element of immediacy, a precious ingredient of television.

Let us take a typical classroom. We are trying to explain how the American Colonies finally lost all patience with the mother country and decided to revolt. The class has memorized the opening lines of the Declaration of Independence. We would like to take them back to Philadelphia on July 4, 1776, when the establishment of our separate country was proclaimed to the world. We have books, we have pictures, we have the teacher. Can she re-create that scene in Independence Hall? Can she ring that Liberty Bell long silenced resting in the main corridor as you enter the building? Well, hardly! But television can do it. It can take us right there and *re-enact* the scene, simulate the ringing of that immortal bell, and give us the fervor of Benjamin Franklin, the quiet confidence of Thomas Jefferson, and the austere approval of John Adams, delegate from Massachusetts. Never will that lesson be forgotten because it has been dramatized in a way we teachers could not do without its help.

Many other local systems besides Philadelphia, are producing adequate television over local commercial outlets. Soon they will have "captive" television of their own or at least their own "feeder" studios. This will put them in the television business, with budgets to do effective teaching-aid programs.

To sum up, television is an art of and by itself. It lacks one advantage of sound recordings and teaching films in that "preview" of programs before presentation to class groups is not possible. It does what radio cannot do adequately—teach skills. It possesses radio's sense of immediacy, but not in sound alone; sight is added. It does what motion pictures cannot do—create the illusion of witnessing events in progress.

Television has its place. It takes that place, along with radio, pictures, recordings, both disc and tape, and all the other audio-visual aids. It remains for us to discover which medium, or combination of media, best serves our teaching purposes. No one has the whole answer yet. We must continue our experimentation on a much wider scale than has as yet been attempted in any one school system. Philadelphia has taken the lead; many others have already begun; and even more are now beginning. Television in our schools is on the march!

PART 4

Part IV. Looking Ahead— The Expanding Role of TV in Education

TO HARNESS the tremendous potential of interest inherent in television is one of the problems of the educator. All studies made to date bring out the fact that both parent and teacher have an obligation to guide the viewing of children to programs heard and seen outside of the classroom. Simple criteria are: (1) Does the program possess anything of permanent value? Is it part of the recorded life of our Nation? (2) Does it set a good example? Will the action portrayed give good motivation to better citizenship, family life, or choice of companions? (3) Does it have any spiritual lift? Do you feel better for having spent your time listening to it? These are tests that any teacher or parent can give programs now current on the air. These are some of the questions we wish to have answered.

How do children who have television sets at home compare with other children in school achievement? Do children having sets at home do better school work when their parents closely control their televiewing?

The Cincinnati Study

Answers to these questions were sought in a survey recently conducted by Xavier University, Cincinnati, Ohio. Nearly 1,000 children in the sixth and seventh grades of 16 public and parochial schools in the Cincinnati area participated in the study, which was conducted by Walter J. Clark, assistant professor of education. The data used included the child's mental age, his achievement in school subjects, and the parental control of his televiewing as measured by a specially designed scale.

This survey and report, which was prepared under the direction of a committee headed by Dr. Raymond McCoy, Dean of the Graduate School at Xavier University, with the cooperation of both the Bureau of Appraisal Services of the Cincinnati Public Schools and the Parochial Schools, bring out, for the first time, many facts in children's listening and viewing habits. The Crosley Broadcasting Corporation provided a subvention of funds for the study.

In comparing the achievement of the televiewing children with that of the nonteleviewing children, Mr. Clark reports that the study revealed

no significant difference—and that their learning was not much affected by the way their parents controlled the televiewing.

"But," he cautioned, "it would be a gross misinterpretation of the data to hold that in the case of a given child his habits of watching television could not affect his school achievement. The data gathered in the study showed that poor television habits, lower IQ's, lower parental control, and poorer school achievement tend to be found in the same child. Like most recreations, television can be used to excess which may result in damage to physical well-being and mental alertness."

The Xavier study dealt only with *recreational* television, and did not concern itself with programs designed specifically to aid learning. The data gathered were described as "startling. While the evidence does not demonstrate that school achievement is suffering from the effects of television, the responses to the questionnaire used in classifying the children into high- and low-control groups have many implications for all social institutions, especially for the family, the school, and the television industry itself."

For example, it was found that the child subjects—mostly 12- and 13-year olds—spent an average of 3.7 hours each school day in front of the television screen. Over the week, counting Saturdays and Sundays, they spent 30 hours watching television—as compared with the 25 hours they spend each week in school.

The report states that "an appalling percentage" of parents have no concern about what their children watch on television. Fifty-two percent of the children reported that they were permitted to watch any programs they chose.

The most popular television show with these preadolescents was Milton Berle; 86 out of every 100 watched him regularly. Next in popularity came three western programs—*Six Gun Theatre*, watched by 85 percent of the children; *Six Gun Playhouse*, watched by 83 percent; and *Hopalong Cassidy*, by 70 percent. Next to the westerns came *Captain Video*, watched by 78 percent; *Arthur Godfrey's Talent Scouts*, by 69 percent; *Stop the Music*, by 62 percent; and *Twenty Questions*, by 56 percent.

Right behind the most popular shows came the mystery-crime programs. *Big Story* was watched by 60 percent of the children; *Lights Out*, by 55 percent; *Big Town*, by 49 percent; *Plainclothes Man*, by 48 percent; *Man vs. Crime*, by 48 percent; *Martin Kane*, by 47 percent; *T-Men in Action*, by 45 percent; *The Web*, by 41 percent; *Hands of Mystery*, by 40 percent; *Suspense*, by 36 percent; *Famous Jury Trials*, by 29 percent; *Danger*, by 20 percent; and *Mystery Playhouse*, by 17 percent.

The Xavier survey found that the pattern of response to the mystery-crime programs was significant. The children tended to watch all or none. For example, the 17 percent who watched *Mystery Playhouse*

on Sunday nights at 11:15 tended to watch all or none. The 17 percent who watched *Mystery Playhouse* on Sunday nights at 11:15 tended to see *Plainclothes Man* at 9:30, *Hands of Mystery* at 10, and *Famous Jury Trials* at 10:30.

TV wrestling also attracted the young children. Those who watched one wrestling program tended to watch all such programs offered before bedtime.

Bedtime rules for children are changing. If the Xavier study is any indication, large numbers of children watched the late television shows. for example, 58 percent reported watching *Home Theatre* from 11:05 to well after midnight. at least once a week. Thirteen percent indicated that they watched these late shows at least five times a week. Another 11 percent stated that they watched the *Owl Theatre or Broadway Open House* four or five times a week at the same late hours. Six percent of the youngsters said that they regularly watched boxing at 1 o'clock on Sunday mornings.

A "surprising number" of the children included in the Xavier study watched the hour-long dramatic productions in the evenings. While these are programs intended for mature persons, more than half the children watched *TV Theatre* from 9 to 10 on Wednesday evenings, and 22 percent watched *Studio One* regularly from 10 to 11 on Monday evenings.

Children whose responses revealed that there was control of television in their homes were usually in the higher IQ brackets, and there was a pattern for the once-a-week programs they were allowed to watch. These programs were: Monday, *Arthur Godfrey's Talent Scouts;* Tuesday, *Milton Berle* and *Cavalcade of Bands;* Wednesday, *Arthur Godfrey;* Thursday, *Stop the Music;* Friday *Twenty Questions* or *We the People* or *Cavalcade of Stars;* Saturday, *Big Top, Show of Shows;* and Sunday, *Zoo Parade* and *Hopalong Cassidy.*

Mr. Clark concluded this study with the statement that it "is not offered as a final answer to the problem of television and its educational relationships. It is hoped, rather, that it will prove to be but one of a number of studies that may clarify various points of view and lead to constructive action."

Education Organized for Television

Audio-visual aids to teaching have been accepted for many years. Eighteen States have audio-visual aid directors within State education departments. Many more operate extensive libraries of film, film strips, and slides, and sound recordings. Eight States have established tape libraries of radio production for use in class. The Louisville Free Library has a catalog of 8,000 such selections for free distribution. It would be fair to say that audio-visual aids to teaching have been accepted.

Programs are over—now to homework. Youngsters in Cincinnati gather round the dining-room table with books, pencils and paper. (Cincinnati Study of Children's TV-Xavier University)

"Now, however, with the advent of television, a new perspective has been introduced. Impressed by the potentiality and results of television in the classroom, the New York State Board of Regents has voted to install 11 TV stations in strategic locations over that State, to supply both classroom and after-school programs to the people of New York. Having already been allocated 8 stations, they asked the Federal Communications Commission for 3 additional assignments for that purpose. They now have 10, in all.

In addition to using television as an illustration to an already well-planned lesson, teachers have shown that college courses can be taught by television. Western Reserve University gives university credit toward a degree for courses taken via television in elementary psychology and contemporary literature. At least 30 other institutions are giving TV adult education courses for certificate, and more will no doubt watch the Western Reserve experiment, taking courage from the results.

Twenty-five years' experimentation with radio and a like (or longer) period in motion pictures have provided background and trained personnel for this new means of teaching. Adequate supplementary materials are available and methods are understood and are readily assimilated by those whose background of previous experience is limited. Experiments in New York go back to 1936-40 when NBC carried on tests

in that city. Subjects which lend themselves particularly to TV were found to be science, the social studies, languages, music, art, English literature, mathematics, and current events. Special subjects, such as health education, vocational guidance, car driving, home economics, and international understanding; all requiring special skills and training, have since been found to lend themselves admirably to TV.

So apparent is the use of television in adult education, with opportunity to increase classes to the thousands rather than being confined to the limits of a classroom, that the Ford Foundation granted more than $2,000,000 in 1951 to that end. One million was assigned to the regular channels of education and another $1,200,000 was given to a professional TV workshop to present programs over commercial TV outlets.

Dr. Earl James McGrath, U. S. Commissioner of Education, presented the opening testimony in the 1950 hearings on the reservation of television frequencies for education in these words:

> To safeguard the public interest, and to protect a great new medium of communication from being closed to the forces of education, which depend completely upon communication for their freedom, I, therefore, urge the Commission to give serious consideration to two recommendations: (1) that for the immediate situation, the Commission, in making all future assignments in the very high frequency band, save at least one locally available and usable television broadcast frequency in each broadcast area for assignment, exclusively to educational station applicants; and (2) that an adequate number of channels in the ultra high frequency band be set aside for assignment to educational stations against the day when broadcasting in that band begins.

As a result of these hearings, 209 frequencies representing something over 10 percent of the total frequencies available were originally marked for the use of education's own TV stations.

The "freeze" on TV assignments was lifted in April 1952, making available some 2,000 additional frequencies for television use in the United States. In addition to the 209 frequencies that had been assigned for education's own stations, 33 become available from unassigned designations making a total of 242. The Joint Committee on Educational Television, an agency of the American Council on Education, representing every phase of American Education, with personal representation of the U. S. Office of Education and the Association for Education by Radio-Television, is functioning under a Ford Foundation grant of $150,000 for the protection of education's interests in TV. At the State College of Iowa, at Ames, a pilot study is being conducted over WOI-TV, the original TV station owned and operated by an educational institution; and the University of Illinois through its Department of Communications and its planned TV operations at Allerton Park is preparing to meet the extraordinary program demands of education in these several fields. The Lowell Institute in Boston, consisting of Harvard, M. I. T., Boston

College, Boston University, Tufts, and Northeastern University, has a Ford grant for a parallel project in radio programing.

Values Inherent in Television

The values inherent in television as a sight and sound means of communication are being demonstrated every day. It is the means par excellence for showing people how to do things. It is definitely a "how" medium, as are motion pictures when applied to the learning process, but it is more flexible, easier to revise and to improve, and with large audiencies is far cheaper. Its audience may easily be in the millions, with per capita cost an infinitesimal fraction of a mill; and no necessity exists for turning it into a film version until (if ever) it is perfect.

It is also a "what" medium, for it can present a true picture of any object. It is moreover, a "when" medium, for any event may be recorded when it is actually happening. Doctors have realized its values to them for demonstration of surgical skills, treatment of bone structure defects, skin diseases, and a thousand other applications to the medical field. The American Medical Association and the U. S. Public Health Service are watching, with great interest, the results of experiments in using television in teaching in the field of medical science. Scientists, as a group, see its value also for demonstration, particularly to bring about a layman's understanding of science, though its application to straight laboratory work is a major contribution to scientific research in itself.

A recent survey covering 3 years' teaching comparisons at the Navy Special Devices Center at Port Washington, N. Y. (available by writing that Center) establishes its value with other media of instruction, in teaching older boys now in our Navy. Extensive research experiments are now going on under grants from the Ford Foundation to discover its effects at many different grade levels. In fact, the Ford Foundation divided the 2 million dollars which it gave, in 1951, to educational television, giving half to educational institutions and allied groups, and the remainder to the television industry, to produce programs of wide educational appeal. This was straight thinking, for it not only spread the work load, but it recognized each element in the American system of broadcasting for what it is worth.

Educational TV Just Beginning

There are now about 138 noncommercial educational radio stations; they are spread out over the country in universities, colleges, and school systems. Some are FM in the 88–92-megacycle band; about 30 more are AM, established for almost the entire period we have had radio. There was only one educational television station prior to the freeze on frequency assignments, but now 242 TV frequencies are available

for educational assignment. Twenty more may become available under unassigned frequencies in the ultra-high frequency band, about to be opened up.

We have 109 television stations today. Under our present allocation, we can have a total of about 2,000 stations in all (1,000 fewer than radio). Problems of financing new stations are as difficult to solve for commercial operation as they are for educational stations. Commercial investment in a single station averages about $300,000 and operating costs are similarly greater than radio. However, educational stations can enter the field more modestly than commercial folk and have greatly lessened operating costs, due to their ability to use student help and to draw on faculty support and departmental budgets, already set up for teaching purposes.

There is a tremendous need for tests and measurements to be applied to the use of television on the elementary and secondary levels. Studies of children's programs and their effect on school achievement have up to now been the only attempts to measure the effects of TV on children of school age.

Regular classroom illustration by means of television, substitution of TV for pupil excursions and trips to points of interest, direct teaching to handicapped children in their homes, summer makeup classes, and correllated outside listening and viewing have yet to be studied in light of learning patterns and accomplished advancement in grade; all these need to be explored and, if possible, simultaneously, to meet the challenge now posed by television. Teachers colleges, State universities with demonstration schools, and city and State school systems are responding to this challenge, working with presently operating television stations to bring this about.

The printing press at the time of its invention was handicapped by as many criticisms and inability to utilize its benefits as radio often is today. The first use of the printing press was the production, in type of the Bible written in the speech of the countries in which it was used, though it has been erroneously believed and held generally, too, that it was the first means of bringing the Bible to the common people in their own language.

Radio has been praised for bringing fine music to the people but, in truth, fine music by means of concerts, recitals, and even home performance, antedated radio by centuries. What radio did do, as the printing press did, and television will do, will be to *multiply* the opportunities for hearing fine music as in the case of the press making copies of the original.

A wise teacher, Mrs. Bement, of Old Deerfield, Mass., has said that "about anyone can be trained to teach an academic subject, particularly on the elementary level, but only a few are fit to live daily and hourly with our children. A teacher must possess personal charm, warmth, emotional maturity, creative ability, human understanding, courage to

accept any challenge, combined with a sense of humor, and, more particularly, faith in the potentiality of every child to grow into a healthy, normal, and useful citizen." Only with these potentials at our command can we hope to *adapt* the school to the child, rather than *press* the child into the pattern of the school.

Where do we go to supplement our own abilities? Never in the history of education have we needed so much to find that answer. With many teachers needed in schools today, we are faced with an alarming shortage of trained teachers, so great, in fact, that State and National subsidies are being sought to balance the load. What can we do while we are waiting for this aid? We must meet this situation *now*.

It has long been believed that the greatest factor in increasing the spread of equal educational opportunity lies in mechanical aids to learning just as the greatest opportunity for raising the standard of living in the world lies in machinery.

"What good is it," ask some of our international observers, "to ship agricultural implements to China, to Greece, to Northern Africa, to Egypt unless the people have been taught how to use them?" Similarly, what good is it to introduce radio, motion pictures, facsimile, and television into our schools unless teachers are trained to use them. Much time has been wasted and many opportunities missed by our inability to utilize these media in the classroom. Yet both radio and its duplicated version, the sound recording, have the ability to *illuminate*, *illustrate*, *instruct*, and *inform*. This is by *sound* alone. If combined with sight as in television it takes on added significance.

Television Could Do It Better

Recently in Rochester, N. Y., a sixth-grade 15-minute radio program on Current Events, was presented as one of the regularly heard lessons in that city. The 86-year-old secretary of Susan B. Anthony (Rochester, you remember, was Susan Anthony's home) told of the life work of Miss Anthony. She described how Miss Anthony fought for women's suffrage *not* because women alone were being disenfranchised but because "it was a right being denied a free citizen of these United States, a right guaranteed by our Fourteenth and Fifteenth Amendments." After the radio presentation, there was a follow-up lesson, skillfully guided from the field of social studies. Our rights as citizens were discussed, and the lesson tied up with the coming of the Freedom Train which would arrive in Rochester one week hence. Then the discussion was just as adroitly guided into the English period to follow for a defintion of the word "suffrage." An observer was heard to exclaim: "One of the most successful lessons I have ever heard presented in a classroom." It was doubtless only one of hundreds of such lessons going on with the aid of radio, in many parts of the country. What could we have not done with that lesson in television?

World War II proved that, in the hands of the unscrupulous, these new media can bring about antisocial action, twist mental concepts, ruin morality, and wreck a stabilized world order. On the contrary, the war also proved truth can be delivered more quickly and effectively to anxious ears by radio than by any other medium, and that it can be an effective medium in rehabilitation of both soldier and civilian. At the present time, both radio and television can bring about understandings and sympathies leading to the maintaining of a lasting peace, if used purposefully.

All these possibilities depend on what goes into the program. If the world needs the "Voice of America," it emphatically also needs a "Voice of Education"!

It is time that television is recognized for what it is, for what it can do by and through itself. Motion pictures, under the leadership of Floyd Brooker, trained hundreds of thousands of our boys in production skills necessary to win a war. Radio need no longer be merely sound. Sight and facsimile reproduction of a graphic material are now available to all FM educational stations. Television utilizes sound as well, giving radio—plus the power to provide low-cost training in basic skills.

When the schools maintain their own TV stations, no longer is it necessary to decide which medium to use as an aid to learning. It is now only necessary to plan what you wish received and produce it. This was not possible when we were dependent upon commercial broadcasters alone to supply curriculum needs. This is true even with full recognition of the commercial broadcasters' contributions to the social studies, to the preservation of human rights, to researches in juvenile delinquency. They have used effectively lessons in the growth of American democracy and thrilling stories of our Foreign Service available in the Transcription Exchange of the Office of Education.

However, what we now speak of here is not that. It is a tailor-made program produced from our own scripts, delivered to the classroom at the time we want them. Shorn of extraneous material, limited only by our own degree of skill in production. Twenty-five years of experimentation in radio is a long time in a fast-moving world. Five years of television is not too little.

We Can Afford Television

Now, at last, that which large cities alone could only have, small towns and cities can afford. The relatively inexpensive high-power TV transmitter, requiring an initial investment of about $65,000 will revolutionize the coverage of school television. TV receiving sets are now available at approximately $1200 each. They are portable and capable in some instances of receiving standard FM programs as well.

The training of teachers in this subject is proceeding at a rapid rate. Teachers colleges are including courses in the use of television and radio

in their course sequences. Most universities will either have their own stations, or will utilize time contributed by commercial broadcasters as a public service. The Syracuse experiment with TV has proved its effective use over a 60-mile radius area from the transmitter.

But the lingering inferiority complex of television, radio, motion pictures, facsimile, film slides, and the like, still seems to limit the field of TV to being considered only as one of the auxiliary aids to education. In one sense this is much like the printing situation, as a purveyor of multiplied thinking, 500 years ago. Is it only time that has removed print from the position of an auxiliary aid to learning? Print is now a primary factor in education. The use of text material through books is standard practice. Reading has become a skill.

In the same way, viewing must become a skill as well. It already has become so in many school systems. Only inertia now stops the extended use of sound and sight in the classroom.

We are reminded of the poor Arabs in the Valley of the Nile turning over the soil with their hands. Fruit and vegetables are produced in abundance, but a tractor would have multiplied the yield; irrigation of the nearby desert would have allowed for diversification of crops. Refrigerated transportation would have helped feed children in Europe.

Yes, we may be forgiven for a little boasting about a valuable educational tool which takes its place alongside the spoken word of the teacher and the printed page of the text. It will become the modern Aladdin's Lamp of the school administration.

Considering that low-power television transmitters may be had for slightly under $40,000 today, and that a TV antenna can sometimes be mounted on the same tower that supports an existing radio-station antenna, it would seem that a school would be able to start television broadcasting with a fairly modest capital outlay. However, TV camera-chains still cost around $15,000 each, and other studio-equipment costs are comparably high. Conversion of at least one radio-station studio for television production will represent a substantial investment. On top of total station costs, the cost of producing the programs themselves must also be taken into account. Thus, in many cases, it will be more advantageous for individual school systems and colleges to combine with other local educational institutions, or with a local cooperative educational TV-station project to share in the time and costs of a single $250,000 station. Such plans are now being developed in nearly one hundred of the localities where a TV-station frequency assignment is allocated for educational station use. This obvious answer to the problem lies in cooperative effort. Daytime programs founded by school systems will use that part of the time not required for the college or the university's adult education program on TV extension classes.

It seems sensible that our schools will avail themselves of the coop-

tunity to *combine* with our other educational institutions to provide both programs and money to pay for a proportionate share of operating expense of the full-time educational stations now being planned in these areas. The station may be 30 or 40 miles away from a city school system wishing to use time. There may be 8 or 10 other large local school systems to be served or many small towns, as well. All can participate in this sort of cooperative arrangement. The cost per pupil will than be relatively slight and the advantage of planned lessons supplementing the curriculum needs, very great.

Perhaps three-fourths of the school systems in the United States may now share in the 242 educational television channels made available to education. Every one which can should take part. National and State-wide program libraries on film and on tape are inevitable in the growth of television over the country, to assist in making effective and economical use of the opportunity.

What will we do with educational television? We will use it for the benefit of every child and grown-up in America.

The Joint Committee on Educational Television, representing all education, is set up under a grant of the Ford Foundation, to help schools and colleges acquire their own television facilities. Write them at: 1785 Massachusetts Avenue, NW., Washington 5, D. C.

○