

A Curriculum Viewpoint on Educational Television

A distinguished American educator surveys a controversial area and raises some penetrating questions.

ONE OF THE greatest potential influences on the curriculum and teaching in our schools and colleges is the use of educational television. It is believed by many people to hold the answer to two of our major problems, the teacher shortage and improvement in the quality of education. The means of solution appears quite simple: Have good teachers teach larger numbers of pupils through the use of television. Sometimes teacher support is sought for this plan by suggesting that under these conditions good teachers could be paid much higher salaries than at present.

Just how far various advocates would go in teaching increased numbers by television is not always made clear. However, it is apparent that a radical revision of the dominant conception and plan of teaching is involved in the thinking of many people. The ultimate logical extension of the idea is made by Hugo Gernsback, editor of *Radio-Electronics*, who holds that the same teacher can instruct 500,000 pupils or more simultaneously just as well as a customary sized group. He proposes a national closed circuit hookup, the operation of which he illustrates in the field of science as follows:

From a central point or points the best technical and science teachers in the land would instruct via large wall projection color

television in *all* classes in the land. If the instructor of the moment is at Yale, the rest of the country is connected to that point. The next lecture may come from MIT in Massachusetts, from Cal-Tech in California or from any other point *because all institutions of learning are tied in to the national teleducation closed-circuit hookup.*¹

Richard B. Hull, director of radio and TV for Ohio State University is reported as stating to a conference of Educational Broadcasters: "The rough outlines of a national framework for radio and television education have now been sketched out . . ." ² In a public school system which I visited last year the director of educational television expressed the opinion that it would be only a few years until all the teaching for their city would emanate from a central studio and classrooms would be monitored by non-professional aides who would keep order. Alexander J. Stoddard urges that general use of television would save a hundred thousand teachers in American schools.³

These proposals are very appealing to many hard-pressed administrators and Boards of Education and to citizens who

¹ "The Elements of Teleducation." *Radio-Electronics*. May 1956, p. 33.

² Reported by Jack Malby in "Television: Teaching's Newest Tool." *Saturday Review*. February 16, 1957, p. 31.

³ *Schools for Tomorrow, An Educator's Blueprint*. New York: The Fund for the Advancement of Education, 1957.

find the tax bill for education onerous. It is not surprising consequently that in some communities Boards of Education, spurred by assertions that an immediate substantial saving can be made in the number of teachers required and the quality of education improved, have taken administrative action requiring schools to establish teaching by television and to reduce their teaching staffs. Something of a campaign has been carried on by some supporters of television to get Boards of Education to do this.

Is the Case for Television Proven?

Many supporters of educational television believe the case for its use is already proven and that the only thing that delays its widespread adoption is the unwillingness of educators to change to new practices. Charles A. Siepmann of New York University states:

But the major obstacle to bringing education abreast of these electronic times is . . . the habitual and outworn patterns of thought, false fears among teachers that television will displace them, inflexible attitudes to the realities of education. The success of experimental educational television suggests that experimentation has gone far enough, that we are now ready for a rapid extension in the practical uses of television in the schools across our land.⁴

Educators generally should ask sincerely whether or not this conclusion is justified. If it is, they should bend their efforts to achieve the rapid adoption of television; if it is not, they should know why they question the conclusiveness of present results and exert their efforts to see that television is used in such fashion as not to jeopardize good instruction.

It is my belief that the desirable extent and nature of the use of television in instruction have not yet been adequately

⁴ "The Case for TV in Education." *New York Times Magazine*. June 2, 1957, p. 47.

proven to warrant widespread adoption of particular plans. The main reasons for this belief are as follows:

1. The number of experiments which have been conducted on teaching by television is still relatively small. They are quite inadequate to provide conclusive evidence of the effectiveness of television under the widely varying conditions which prevail in our schools and colleges and in relation to various educational objectives.

2. Very few of the experiments have been rigorously structured so that they meet desirable standards of scientific research. A summary of research on television teaching by Hideya Kumata states that there has been a "tendency for research to be an afterthought to instructional television efforts. Except in a few studies, a true partnership between performance and evaluation does not exist."⁵

3. The powerful effect on motivation of doing something new has not been neutralized in the great majority of these studies. One of the amazing things about research on the curriculum and methods of teaching is the great extent to which experimental methods have proved superior to established ones. Yet many of these methods, supposedly proven superior, have dropped out of practice in the very situations in which the experiments were conducted. They just did not stand up under the test of time when the motivational force of doing something new was gone. This tendency toward success of new practices when carried on by people who believe in them can be neutralized either by trying control plans which also have new elements in them or by allowing sufficient time for the newness to wear off. At

⁵ *An Inventory of Instructional Television Research*. Ann Arbor, Michigan: Educational Television and Radio Center. December 1, 1956.

the present time it is impossible to tell to what extent the results of television teaching experiments are merely the effects of added motivation resulting from doing something different.

4. The experiments in television teaching have been evaluated in relation to limited educational objectives. Measurements have primarily been directed at two questions: How does the factual knowledge the student has gained compare with that gained through conventional teaching? How do students like television teaching compared with conventional? There are many additional highly important educational outcomes which should be tested before the desirable form and extent of teaching by television have been proven. For example, one of the desirable outcomes of science teaching at the undergraduate level is the discovery of exceptional talent for work in science and the stimulation of such students to become scientists. Studies have shown that a group of small liberal arts colleges have been exceptionally successful in doing this, even more successful than such institutions as M.I.T. and large universities with outstanding science departments like the University of California at Berkeley. One cannot but suspect that there is something in the close association of professor and student in the small liberal arts college which accounts for its excellence in this respect. Consequently, the question arises as to the probable influence of teaching science by television on the important objective of discovering young people with outstanding talent in science and interesting them in it as a life work. This is an objective which can only be tested over a fairly extended period of time.

It is generally agreed that a major concern of education should be to influence

the behavior of students. There has been a continuing effort, especially in elementary and secondary schools, to interpret educational objectives in behavioral terms and to provide the kinds of learning experiences which achieve these objectives. This is a very different thing from focusing on the mastery of facts. It can be done with any degree of assurance only when the teacher is in position to observe the behavior of pupils. Since in teaching by television the teacher has no opportunity to observe the action of pupils, behavioral objectives are pretty largely eliminated as purposes for such teaching.

5. Appraisal of the effectiveness of television teaching has usually been made by comparison with the type of conventional teaching which is most like television teaching, that is, the lecture method. The largest number of studies have been made at the college level. Generally they have been of situations in which students are conventionally taught in large lecture sections in which they have little or no opportunity for questions and discussions and where emphasis is primarily on gaining command of facts. It is pretty well recognized that this pattern of teaching leaves a great deal to be desired and it is quite possible that teaching by television is just as good or even better, since the best lecturers can be used. But it does not follow that either is the best method of teaching, and it is quite possible that using television simply accentuates a present weakness in the conventional plan of instruction. Perhaps we should rather be moving in the direction of a wider variety of pupil activities—less listening

HOLLIS L. CASWELL is president,
Teachers College, Columbia University,
New York.

and more discussion, less demonstration and more experimentation, less uniformity and greater adjustment to individual differences.

Importance of How Television Is Used

Television can, of course, be used in different ways and for different purposes. In general there are two broad categories of use. One is for teaching in which the central responsibility for a phase of the curriculum is carried by the television teacher, which I shall refer to as *direct teaching*. The other is for supplementing the work of regular classroom teachers who carry the responsibility for direct instruction. There are instances in which efforts are made to combine the two.

Current discussions of the use of television focus largely around the first type of use. It is only if direct teaching responsibility is taken by the television teacher that the number of teachers needed can be reduced, which is consistently stated by its advocates as a major advantage of the use of television.

The second type of use fits in with the common approach to audio-visual aids to instruction. There seems to be no reasonable question about the desirability of utilizing the resources of television in this way along with films and other types of aids.

The real question centers on the desirability of using television for direct teaching. Much has been written about the advantages to be derived from this form of use but little has been indicated as to its limitations. It is important that limitations be weighed against advantages. The principal limitations, when viewed from the perspective of qualities which make a good curriculum and effective teaching, as I see them, follow:

1. Only in highly specialized phases of the curriculum can a teacher teaching

by television organize instruction around the interests and purposes of pupils. The relative importance which should be attached to the interests and purposes of pupils is a point upon which there have been wide differences of opinion. There is hardly anyone, however, who will deny that it is highly desirable to have pupils interested in what they are being taught, in fact, that what they learn is a direct reflection of the nature of their interest and purpose.

The determination and stimulation of pupil interests which provide appropriate bases for organizing good learning experiences is a difficult aspect of teaching. Ability to do this is one of the major points at which the artist teacher differs from the poor ones. Direct association with students is required in most teaching-learning situations to ascertain their interests, to determine how successful one is in stimulating new interests, and to build instruction on these interests.

The effectiveness of teaching by television would be greatly influenced by what the teacher may assume about the interest and purpose of the students. If, for example, a professor in a medical school is giving a course on new surgical techniques for experienced surgeons, he may assume a highly specialized and strong interest on the part of those who choose to take the course, along with a background of experience which would make exposition and demonstration highly meaningful. In such a teaching situation the instructor needs to be little concerned with the basic interest and central purpose of his students. He may well be able to teach by television with a high level of effectiveness.

But a teacher who is teaching arithmetic to elementary school children may safely make no assumption whatever about the degree of pupil interest and

purpose. In such a situation, discovery of interests that may be built on and stimulation of new interests are a major aspect of good teaching. It is difficult to see how this can be done in any fundamental fashion by television teaching.

It is my opinion that a major factor in determining when television may advantageously be used for direct teaching is the degree of specificity of the interest and purpose of the students. If these basic features of a good teaching-learning situation may safely be assumed to exist in the group to be instructed, a major barrier to good teaching by television is overcome; but if this is not the case, the direct contact of the teacher with pupils appears essential. This means that television may be more appropriate for dealing with elective, specialized aspects of the curriculum in which mature students are involved than with required general work and immature students.

2. The variety of pupil activities which can be directed by television is limited. It is largely restricted to listening and observing. Obviously, firsthand experiences in which teacher and pupils are involved together are impossible. A field trip in science cannot be taken, although a television view of a factory or power plant or other object of interest may be shown. Construction activities, laboratory experience, and other such firsthand activities in general cannot be guided into significant learning experiences by a television teacher.

Over the years one of the central concerns in curriculum improvement has been to get more firsthand experience in the curriculum. There has been a consistent effort to reduce the amount of listening in which pupils engage and to increase the amount of doing. Television teaching inevitably, I believe, operates

in opposition to this goal. It is a natural instrument over which to talk at students and to show them. It is not a ready means for pupils to respond overtly or to make reports or to discuss or to be involved in projects.

Some advocates of television teaching indicate in their writing a limited conception of the activities that should be provided pupils in a good curriculum. Charles A. Siepman states: ". . . television teaching, supplemented by a textbook, is actually sufficient to provide all necessary instruction."⁶

It is obvious that one's attitude toward television teaching will be directly influenced by how much importance is attached to providing a variety of pupil activities and firsthand experience. If you believe, as Mr. Siepman does, that the desired outcomes of education can be achieved by having pupils listen to lectures, observe demonstrations, and study textbooks, television teaching will be entirely acceptable. But if you see these activities as entirely too limited to achieve the goals of education you are concerned about, if you believe pupils need to discuss, carry out projects, take excursions, do experiments, engage in construction activities and the like, television teaching suffers under a severe handicap.

3. Adjustment to individual differences among pupils is limited by television teaching. The essential basis of adjustment to individual differences is knowledge of the individual student—his abilities, his interests, his achievements and his difficulties. It is obvious that a teacher using television cannot know individual pupils. A coaxial cable, however short or long, effectively separates the teacher from knowledge of his students as individuals. From examinations,

⁶ *Op. cit.*, p. 13.

papers, and written reports he may get some general ideas; but, if he is teaching large numbers, he must depend on readers and so is cut off from even this indirect connection with the students he teaches. A television teacher is forced to teach to what he conceives to be the most common needs of a group.

The one adjustment to individual differences which advocates of television teaching suggest is the time given to a course. They propose that if television lectures are placed on film, the lectures can be repeated as often as desired for learners of different abilities. This introduces another element in the situation: teaching by film. There has already been sufficient experience with this to demonstrate that films are fine supplementary aids to teaching but do not serve to make unnecessary direct teacher guidance of the learning situation.

A point sometimes made about television teaching is that its use frees the classroom teacher to give more attention to individual differences. This moves into the area of using television to supplement the work of classroom teachers, who continue to carry the central responsibility for their pupils. It seems evident that such use might be advantageous. But this will not save teachers, which is a principal argument for the widespread use of television. Already this type of supplementary aid is achieved by many good teachers through the use of films.

4. The stimulus of the personal interest of a teacher in a pupil's achievement is largely eliminated by television teaching. One of the great weaknesses of the usual lecture course is the fact that there is little opportunity for teachers to become acquainted with individual students and for the students to gain the motivational stimulation and guidance

the personal interest of a teacher affords. Television teaching reduces this possibility almost to the vanishing point.

Often it is argued that television can extend the influence of great teachers from a few students to many hundreds or even thousands. What is overlooked is the extent to which teachers are great because of their direct, personal influence on students. Overwhelmingly, I have found that as people talk about teachers who have influenced them significantly, the teachers have taken a personal interest in them. It is rare indeed that teachers who have taught large lecture classes are cited by people as having exerted significant influence on them or as being among their outstanding teachers. In the overwhelming number of cases the teacher who is considered outstanding by students is the one who has established some kind of personal relationship with them, guiding them directly in learning situations. Consequently, taking teachers who have exerted great influence on students out of classrooms and putting them in television studios, far from extending their influence, may substantially reduce such influence.

5. Television teaching tends to fragment the curriculum and makes it largely impossible to relate teaching to the out-of-school experiences and interests of pupils. One of the qualities of a good curriculum is the extent to which the various aspects are interrelated. Every good elementary teacher knows, for example, that a highly important means of teaching spelling is to see that pupils spell correctly in the writing they do in all the various phases of their work. While general word lists may desirably be used for a check, good teachers keep a list based on the activities of each group of pupils and help each pupil

keep a check on his own spelling difficulties. Consequently, it is impossible in a modern curriculum to conceive of teaching spelling only as a separate subject unrelated to other aspects of the curriculum. Special practice in spelling is provided as needed, but it develops out of and feeds back into actual use of spelling in various parts of the curriculum. The amount of practice is adjusted to individual pupil needs. Some pupils with a high level of verbal aptitude need only a brief check-up each week; others with a low level will require frequent drill.

With a modern conception of teaching spelling it is inconceivable to attempt to teach it by television. Yet one entire school system has devoted a television experiment to teaching second grade spelling. The only possible outcome is to defunctionalize spelling and largely eliminate adjustments to individual differences.

Other aspects of the curriculum should be interrelated also for maximum effectiveness in learning. Teaching by television reduces the opportunity to do this in all fields.

As the concerns of students become more specific and as they choose particular courses because of these concerns, the interrelationship of various phases of the curriculum becomes less vital. The development of specific concerns occurs as the student becomes more mature and as he is able to see and to establish desirable interrelations among his activities independently. As students reach this stage of development, courses may be appropriately organized as separate and largely independent aspects of the curriculum; and they may then be taught with greater promise of success by television.

For example, while it seems quite impossible to establish the necessary and

desirable interrelationships of arithmetic in the elementary school to other aspects of the curriculum to teach it well by television, when a student has reached the maturity to desire to learn trigonometry with its specialized subject-matter relationships and has established habits of independent study, it would be more appropriate to undertake to teach him by television. Even in this latter case it must be recognized that interest by the student in studying trigonometry will probably result in most cases from the interest and stimulation of a teacher and that when it is studied by television the opportunity to have difficulties resolved and to secure encouragement to get over the hard places is largely lacking.

A related factor of great importance is the significance that out-of-school experience and interest can give to learning. Much good teaching gets its setting from knowledge of what pupils do out of school, their recreational interests, and the community setting in which they live. Class projects which are most valuable often take their setting in some feature of community life—a problem, a service, or an aspect of history. Also, in dealing with learning difficulties it is a basic principle to find a major point of interest and activity of the student from which to start. A student who has difficulty in reading and who is interested in baseball will learn to read better by starting with baseball. In teaching by television it is largely impossible to relate teaching to out-of-school interests and activities of pupils. This is another important limitation which television places on good teaching.

The Argument of Expediency

When I have undertaken to discuss the limitations of teaching by television with some of its advocates—which incident-

ally is very difficult to do without being labeled an old foggy standing in the way of progress—the ultimate and to them conclusive argument is that something must be done to teach the flood of students that is descending on the schools and colleges. Obviously, this is quite a different issue than the one we have been discussing in this article, which centers on the relation of teaching by television to the quality of education.

So far as the schools are concerned, I am convinced that television advocates have tended to overplay the teacher shortage, using it as an expedient means of advancing the introduction of television. They ignore the fact that the level of preparation of teachers has been constantly improving, that fewer emergency permits are now being issued than previously and that the most authoritative estimate is that an adequate supply of fully prepared teachers can be available in less than ten years if present recruitment efforts are continued.

On the college level the situation may well be far more serious within the next ten years than it has been in the schools. In many institutions measures will undoubtedly have to be taken to get more students taught by given sized staffs. Television obviously will play a significant role in this situation. I would hope that the pressures of having to teach more students will not serve over the long run to extend and fix more firmly in the colleges a pattern of teaching which makes the mastery of facts the almost exclusive goal of college teaching and listening to lectures the dominant class activity of students. This is already too much the case.

Reduction in the number of courses offered, increase in plans of independent study, greater use of discussion groups and other means may desirably be ex-

tended in use. It may be predicted with confidence, I believe, that those higher institutions which maintain programs in which students have the opportunity for direct contact with their teachers will tend to get the more serious and abler students who are in position to make a choice among institutions.

It is my conclusion that greater promises are being made for television by many of its advocates than can be justified. Much of the experimentation which is referred to is no more than demonstration on a limited basis. Promises that the number of teachers needed to provide a good educational program can be greatly reduced overlook the broader picture of what is required to provide a good curriculum and effective teaching.

The method of advancing the use of television by convincing Boards of Education that they should take direct action requiring its use seems to me to be contrary to one of the most important things we have learned about the best ways of improving education. It has become increasingly clear over the years that the teachers who are responsible for putting into effect changes in the curriculum and in methods of teaching must have a major part in determining what the changes should be if they are to be beneficent and effective. The whole approach that is currently being made to get Boards of Education and administrators to legislate change is inconsistent with this experience.

Finally, if there is the possibility that television may be used to teach all pupils within a state or several states or the nation, we must appraise with care what the effects will be on our prized principle of local control of the curriculum. It is difficult, in terms of our tradition, to view with equanimity a situation in

which every pupil throughout a state or the nation in the tenth grade would be taught biology at precisely the same hour and in the same way; or where one professor of history would teach all college students in American History his particular interpretation of the causes of the Civil War. Such a condition would be comparable to that existing in the most centralized systems of education. Local control of the curriculum has been a great safeguard against any one point of view dominating the education of students, and it has provided a highly effective means of stimulating progress by combating uniformity and undesirable standardization. Television, as envisioned by some, could well erode this principle

over the years, an outcome which I personally would view with apprehension.

It will be desirable, in my judgment, as we test the uses to which television may be put, to check persistently against the broader criterion of the kind of curriculum and teaching we wish in our schools and colleges. If some things have to be done for the sake of expediency under the pressure of numbers, let us at least recognize when we compromise with desirable standards of teaching and let us be sure that we are not sold an approach to teaching which will save dollars but will impoverish the educational opportunities of American children and youth.

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population. By 1970, 75% more professional and technical personnel and 50% more white collar workers will be needed, according to Devereux Josephs, chairman of the President's Committee on Education Beyond the High School, quoting from the United States Bureau of Labor Statistics.¹⁰

It becomes apparent, then, that the scramble by employers for educated talent will become greater, rather than less, in the years ahead. "The intensified competition will extend even farther down the line in the years to come," John W. Gardner notes in his perceptive statement, "The Great Talent Hunt."¹¹

¹⁰ Devereux Josephs, "Conceptualize, Publicize, Synthesize." *Phi Delta Kappan*, XXXVIII, No. 5 (February 1957), p. 173.

¹¹ John W. Gardner, "The Great Talent Hunt." *Annual Report, Carnegie Corporation of New York*, 1956, p. 21.

It is also quite probable, as various authorities have suggested, that the diversity of types of post-secondary education will continue to increase as both the number and the heterogeneity of students seeking further learning grow. Community colleges, technical institutes, adult education, short-term and part-time study plans, as well as greater use of educational television, will all be called upon to shoulder a substantial portion of the load.

While it is apparent that colleges and universities will expand within the limits of available funds and staff personnel, it will be a long time, if ever, before there are many vacant spaces in higher institutions. Under these circumstances, it is absolutely essential that the best wisdom and counsel be sought toward the logical and equitable solution to the constant enigma: Who should go to college?

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