Implications of Continental Classroom for Open-Circuit Television Teaching

By EDWIN P. ADKINS

The technical aspects of production of a network television class are analyzed, and an accounting of costs is presented. Problems of distribution are discussed. Ways of utilizing special properties of television in presenting courses at a college level are emphasized. Implications of *Continental Classroom* for special group education, for general adult education, and an analysis of the role of network television in education are presented.

THE *Continental Classroom* physics series is the first nation-wide TV college course.* This pioneering effort is being carried by 150 TV stations and the course is being offered for credit by 250 colleges and universities. The college effort is coordinated by the American Association of Colleges for Teacher Education.†

The purpose is to provide those interested, particularly high-school science teachers, with up-to-date information concerning recent developments in physics, and to demonstrate techniques essential to effective teaching of basic principles of physical science. It is planned as a lower-level graduate course for those who have some background in physics and mathematics.

Necessary Elements of a Good ETV Course

The first ingredient of a successful educational television (ETV) course is a teacher who combines teaching skill with a solid reputation as a scholar in his field. Both are necessary if the course is to be truly successful. This objective was achieved in the selection as national teacher of Harvey E. White, Professor and Vice-Chairman of the Department of Physics at the University of California, Berkeley. Over a period of 33 years Dr. White had demonstrated that he was a master of the art of teaching, and, at the same time, the wide acceptance of his textbooks, his connection with the Manhattan Project, and his position as consultant to the Atomic Energy Commission placed his reputation beyond question. Dr. White was given complete freedom to structure the course as he thought best.

That Professor White has lived up to expectations in his presentation of this first national course has been amply demonstrated. Researchers have established that approximately 300,000 people viewed the course each morning at 6:30; that 28,000 individuals purchased lesson synopses in the first semester; that thousands of textbooks were sold; and that 5000 teachers and others enrolled for credit and audit in the 250 participating colleges. Preliminary evaluation figures, based on personal interviews, indicate that more than 90% of those regularly following the course find it of great usefulness.

The second essential element of a good ETV course is well-financed production. Too often ETV courses have been run on a shoestring, without proper technical staffing and facilities. *Continental Classroom* has the advantage of the production know-how of NBC; appropriate equipment is available; and all facets of production are handled professionally.

Budget and Distribution

All this takes money, a great deal more money than was ever before alloted to an ETV program. The series (160 broadcasts) was budgeted at $1,112,000. Of the total, $560,000 was set aside for production expenses, $425,000 for longlines and associated distribution costs, $27,000 for contingency purposes, and $100,000 for administration, coordination and evaluation of the course. The bulk of the last item will go to evaluation.

Among the production items, $145,751 goes for staff, office expenses, talent and guest performers; $220,960 for basic production costs (as $71,392 for studio rental, $38,400 for stagehands, $19,200 for graphic arts and $12,000 for properties); $127,314 for making and distributing ten kinescope copies; and $154,649 for video tape.

The shows are taped and recorded on film in the NBC studios in New York about two weeks prior to air date. One tape is shipped to Los Angeles and the other remains in New York. Hence when the show goes on the air, at 6:30 A.M. local time, the Eastern time zone is fed from New York and the Central and Pacific zones from Los Angeles. Thirty-one stations, including those in the Mountain time zone, are serviced by kinescopes which are distributed from New York. The show is carried in 46 States and Puerto Rico.

Professional Staff Essential

One of the chief differences between an ordinary and a superior TV class is the skill with which the equipment and special devices are used on the show. All TV productions have cameras, for example, but not all have skilled directors and cameramen. All studios or studio classrooms have lights, but not all have lighting technicians who can make the most effective use of lighting. All TV classes have teachers, on both closed and open-circuit, but most have not been carefully chosen with TV goals in mind. Many teachers presently handling TV classes are there for no particular reason other than that they were "volunteers." Quite often the results show it, and the accumulated effect on TV education is disastrous.

It is in the rehearsal sessions that all elements of the TV presentation are brought to bear upon the finished performance. It is here that the producer, the director, the cameramen, the stagehands, the teachers and others involved take the academic material and equipment to be used and adapt it to the TV medium. And it is here that the vast majority of TV efforts have completely failed. In too many cases there is no rehearsal and little prior planning. To show a piece of equipment in a TV laboratory demonstration can be wholly gratifying or totally thwarting to the student. It depends upon how clearly and effectively the equipment is shown. This effectiveness comes from teamwork on the part of teacher, director and crew, and can only be worked out in rehearsal. It is in rehearsal that shot-sequences and the use of special devices, such as the split screen, the close-up, superimposition and others, are imaginatively developed.

The narrow line between the mundane and the effective often lies in the kind of aids used, especially in the graphic arts area. Charts, diagrams and chalk-board work can be extremely effective provided these elements are properly planned, imaginatively shown and carefully integrated into the total lesson by director and teacher. This implies of course that such aids must be planned and executed in advance and

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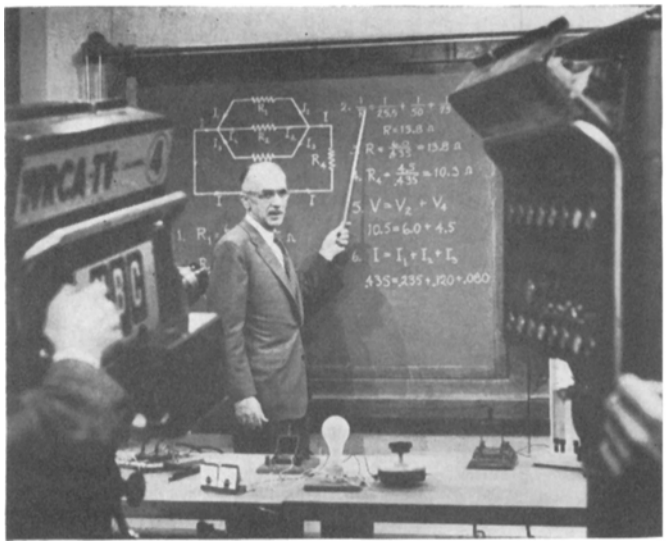

Fig. 1. Typical demonstration during TV physics lecture. Instructor is Harvey E. White, Professor of Physics, Univ. of California, Berkeley.

Fig. 2. Guest lecturer, Nobel Prize winner Walter Brattain, demonstrates equipment illustrating semiconductors in a magnetic field as he lectures on the subject of "Transistors." Lecture given on NBC set in New York for *Continental Classroom*.

that adequate help must be given the instructor in their preparation.

When we have learned two basic lessons, the TV medium will occupy an important place in education. These lessons are (1) that the TV medium is new, and that it *is* a *medium*, not merely another audio-visual aid, and (2) that TV teaching is expensive and must be properly financed if it is to be effective. Once the first condition is met philosophically by the teaching profession and the public, and when money is made available, the possibilities of TV in education are almost limitless.

Role of Network TV

TV can be and undoubtedly will be a powerful instrument of education. In general, network television should be looked upon as an available means for reaching goals which cannot be reached at all, or at least not as well in a limited time, by the colleges, universities and schools in their independent capacities.

Thus in the technical and special field where the audience is small when treated locally, the possibilities may be great when applied nationally. The present physics audience in the *Continental Classroom* is a case in point. There may be only a handful of interested persons in a given college area, or for that matter within the listening area of one station, but when telecast nation-wide the total audience, educationally speaking, is staggering. In these terms costs are nominal. Conservatively, 300,000 individuals watch *Continental Classroom* daily. The total cost of each program is about $6950. Thus the cost for each viewer is only 2½ cents a day. This same kind of special audience course could be produced for doctors, lawyers, home economists, engineers, office managers and many others.

The implications for national, regional, state and local television in the broad area of adult education are legion and perhaps obvious to the casual observer. Nevertheless it is timely to point to this facet of the situation when there is increasing attention being paid throughout the country to the needs of continuing education in general and to the need of the aging in particular. The use of TV can certainly aid in the solution of these problems.

Quite obviously TV is no panacea for all the problems of education. It is doubtful that it will significantly alleviate the teacher shortage, the lack of dormitories or classrooms, or the dearth of instructional materials now so painfully apparent in many of our colleges and school systems. Television cannot replace the classroom teacher, but rather it may help him do a better job.

The question of relative costs is an open one. Many believe that TV can make education less expensive without lowering standards. This may ultimately prove to be correct. In the opinion of this observer, however, this is an extremely dangerous ground upon which to justify the use of TV in schools. In the long run, total educational costs could be increased because of TV. The important consideration is whether or not education is improved. If education can be improved through TV, then its cost is justified. But neither a saving nor increased cost can be justified if education suffers.

Implications for the Future

Certain problems must be solved before TV teaching can reach its maximum efficiency. The question which dwarfs all others is what can be done to bridge the gap created when the teacher is physically separated from his students. This loss of intimacy is felt by both teacher and student. The values of immediate, and before and after class contact must in some way be compensated for. A great deal of research into the techniques and methods of learning as well as teaching by TV must be undertaken.

Financing is of course a problem, and a complicated one, since this will undoubtedly involve both governmental and private agencies in varying combinations and forms as TV teaching develops. Certainly this is a place where private industry can join with the educator to perform a real service for the nation.

Finally a major obstacle to be overcome is the availability of network time at all hours of the day. The commercial systems can be expected to go only so far in making such time available. Probably the ultimate solution will be provided by national, regional and state ETV networks. The nation can ill afford to delay the construction of the necessary facilities for too long. Educational time, even with the best and most up-to-date materials and equipment, is a valuable commodity in the year 1959.