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# Television and the University

By RAY J. STANLEY

**The growth and effectiveness of educational television as well as increasing enrollments provide the basis for a discussion on the function of television in the University. The Ohio State University is used as a case study. Both broadcast and closed-circuit installations are discussed and their service to the campus and community is cited. Equipment, programing and stations of the closed-circuit network are described.**

### Television and Education

A question one hears frequently is, "What business does a university have in television?" Perhaps we shall do better reversing the question and ask, "What business does television have in a university?" Before drawing a detailed description of facilities and uses of TV within The Ohio State University, it may be useful to bring into the discussion enough recent history to provide some background for such a discussion.

A little more than ten years ago, the entire educational television (ETV) movement was given considerable impetus when the Federal Communications Commission made the decision to reserve 242 TV channels exclusively for educational purposes. Since then some 76 noncommercial educational channels have been activated. Some of these are operated by universities, some by school boards and some by nonprofit organizations established on a community-wide basis.

These ETV stations boast their own national network operating by film and video-tape through the National Educational Television and Radio Center. They are reported to reach collectively a national audience of around 22,000,000 people with reasonable regularity.

In addition, an estimated 600 closed-circuit TV installations in schools and colleges around the country are in some way doing an educational job. Of the 76-odd ETV broadcasting services which have been inaugurated in the past ten years, only one has gone out of operation.

Under a contract from the U.S. Office of Education, Wilbur Schramm, Director of the Institute for Communications Research of Stanford University, and his colleagues examined the experience of educational television over a ten-year period as reflected in approximately 400 final examination or standard test comparisons of instructional television and classroom teaching. These comparisons show that there is "no significant difference" in the results produced by the two teaching methods. Further, the effectiveness of ETV can be summarized in the following statement by Mr. Schramm. "There can no longer be any doubt that students learn efficiently from instructional television. The fact has been demonstrated now in hundreds of schools, by thousands of students, in every part of the United States."*

Educational facilities are being, and will continue to be jarred by the population explosion. One of the most definitive studies of the effect on education of the population explosion has been made by Ronald B. Thompson, Executive Dean of Special Services of the Ohio State University.† The report analyzes enrollment growths on a national, regional and institutional basis, and presents a conservative estimate of future enrollment. The following are a few pertinent items from that study.

(1) In the 19 states which comprise the North Central Association, the population of college-age people in 1960 was a bit more than 3,300,000. By 1975 the college-age group will number just about 5,500,000.

(2) In Ohio alone, the rate of enrollment of the past few years, when projected 8 years, indicates that various colleges and universities in the state will need to provide for an additional 150,000 students.

(3) In 1951 enrollment at Ohio State University was, roughly 18,600 students. In 1961 the total was 27,500. In 1966 that figure, it is estimated, will be 42,500. By 1972, it can be expected that the enrollment will be almost doubled to total 55,400 students.

Against this three-point background—the growth of ETV on a national basis, the established effectiveness of television as a teaching medium, the increasing pressure of enrollments—let us define the business of television in the university. Since The Ohio State University is characteristic of many university owned and managed TV operations, it will serve as a case study for our analysis.

### TV at Ohio State

In 1956 WOSU-TV began operating on UHF Channel 34, the only UHF in a VHF market. The initial schedule of 20 hours per week was based largely on the programs available through its film-network service and such local resources as might be exploited on a limited budget. In 1957 the station began a working relationship with the Columbus Public School system which established school broadcasting as an important aspect of its operation. In 1960 President Novice Fawcett established The Ohio State University Telecommunications Center under the direction of Richard B. Hull to assume overall responsibility for audio-visual and telecommunications facilities, functions and personnel, on and off campus.

Today television at Ohio State is part of a large complex of supplementary teaching functions which includes WOSU radio (AM and FM), an extensive audio recording service, the Division of Teaching Aids with its

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* Educational Television—The Next Ten Years," Wilbur Schramm, (ed.), Institute for Communication Research, Stanford University, 1962.

† "The Impending Tidal Wave of Students," Dean Ronald B. Thompson, *Ohio State University Bulletin* (out of print) 1955.

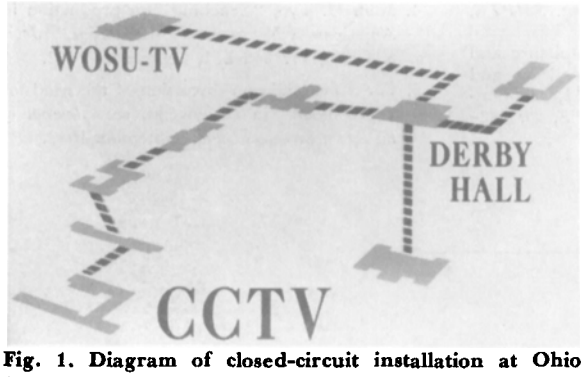


**Fig. 1. Diagram of closed-circuit installation at Ohio State. Nine-channel circuit is based on r-f distribution via cable.**

library of film and other visual materials and equipment. Also included are associated services relating to Airborne Television, the Institute for Education by Radio-TV, the Annual Exhibition of Educational Programs from which emerge the nationally prized Ohio State Awards, and a number of other workshops and institutes.

Within the framework of the Telecommunications Center, TV functions are divided into two major areas: broadcast ("open" circuit) and closed circuit.

As a broadcasting station WOSU-TV has expanded its schedule from the original 20 hours per week to 75 hours per week. Our commitment to public schools in Columbus and the area has grown from one to fourteen programs per week. Approximately 15 hours per week are composed of film and video tapes from our national network. Another 8 hours per week are live productions originated in cooperation with University and community resources and agencies.

(*Note:* In the presentation of this paper, the author utilized a series of kinescope film clips to illustrate his points. For publication purposes, appropriate deletions and emendations have been made in the balance of the paper to provide a useful text in the absence of the film.)

In 1957 approximately 575 grade school students were involved in TV instruction. Today approximately 125,000 pupils in Columbus and surrounding area schools receive some portion of their instruction via broadcast television, most of it at the elementary and junior high school levels. The range of subjects broadcast to the public schools includes Physical Education, Science, Geography, Languages, Art and Reading.

### The Closed Circuit Operation

The closed-circuit system interconnects nine campus buildings by a coaxial cable network installed and maintained by the Ohio Bell Telephone Co. (Fig. 1).

Key stations in this network are Derby Hall, near the center of the campus, and WOSU-TV, about two miles west, on the fringe of the campus proper. Other buildings in the grid are connected by means of a round-robin, nine-channel transmission system. By this means, programs or lessons can be delivered to a total of 30 classrooms.

One production studio is located in Derby Hall. It is equipped with the vidicon cameras, film chain, associated control equipment and the production facilities found in a normal classroom. This studio is used to originate lectures and demonstrations in course-instruction; it also serves as a practical laboratory for TV Production and Journalism courses.

Closed-circuit materials produced at Derby are fed to WOSU-TV for video-tape recording. The studio at the station is also used occasionally for closed-circuit purposes, either to relieve schedule conflicts or to take advantage of the image-orthicon cameras available there.

All closed-circuit instructional programs are recorded on video tape because the same lecture must be repeated several times each day. Three Ampex video-tape recorders are in operation at WOSU-TV to serve this purpose.

In addition to the general distribution system, several other installations exist on campus on a self-contained or semi-independent basis. One such system is located in the College of Dentistry (Figs. 2 and 3). Vidicon cameras in a dental operating "studio" are linked to three auditorium-type classrooms within the building, each capable of seating 150 dental students (Fig. 4). The Dental closed-circuit normally functions independently, for its own instructional purposes; however, it also is linked to the main campus system so that certain demonstrations can be video-taped at the TV station.

In the Medical School limited installations are used for observational purposes in connection with fluoroscopic examination and in three radiation therapy centers (Fig. 5). It is planned to expand the Medical School development to include TV origination and transmission facilities in two operating rooms and one delivery room in order to provide demonstrations for medical students in Surgery and Obstetrics. When this happens, the entire Medical School

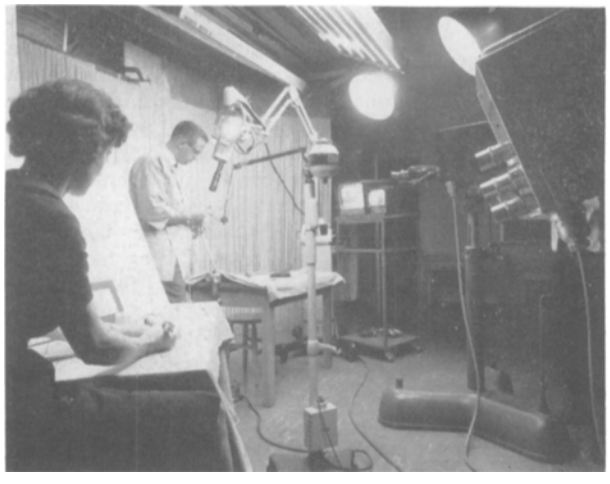

**Fig. 2. TV studio at Dentistry School, usually functions independently but is linked to the main campus system.**

**Fig. 3. Control room of Dentistry TV installation.**

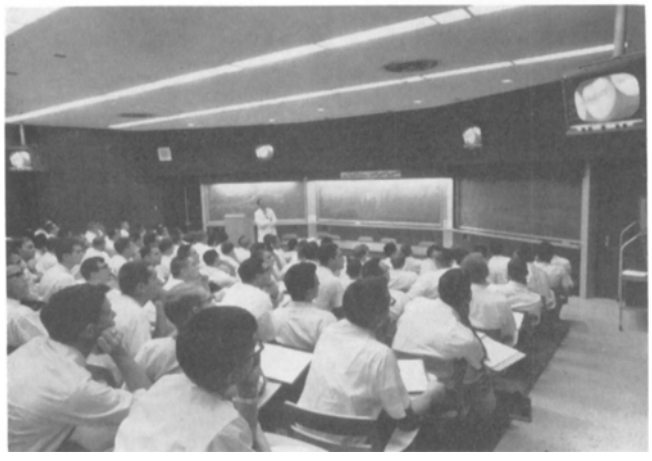

**Fig. 4. Dentistry students viewing TV demonstration. Studio is linked to three auditoriums accommodating 150 students each.**

**Fig. 5. One of three installations in Radiation Therapy Center at the Medical School. Vidicon camera, upper left, surveys patient under treatment and is monitored by technician.**

setup will also be linked to the main campus circuit.

**Content and Applications**

A brief review of the kind of material that goes over the closed circuit is worthwhile.

Zoology is the course most students elect for fulfilling their basic science requirements. Currently, an average of 1,000 students per quarter, or 4,000 per year, elect Zoology. By means of television they all get the same uniform lecture and demonstration instruction.

Mathematics is another department which has felt the pinch of growing enrollments. In a given quarter, for instance, an expected enrollment of 1,200 turned out to be more like 2,100 in one TV lecture course. Enrollments for all the television courses offered by the Mathematics Department added up to 6,000 for the past school year.

Every able-bodied student at Ohio State must take Health Education. Current enrollment rates require 39 sections per quarter to handle quiz and discussion instruction in this course. Here again, closed-circuit TV furnishes the means for providing uniform basic instruction. The Health Education TV lectures were viewed by 6,000 students during last year.

All in all, during the academic year, closed-circuit TV served a total of 17,300 students in 10 courses for both lecture and demonstration purposes last year.

If the only value of closed-circuit TV was the distribution of lectures to large numbers of students, that might be reason enough for its existence. However, zoom and close-up lenses of TV cameras may also contribute to better teaching in many situations. In dentistry classes, for instance, a demonstration can be viewed on four screens in a single auditorium by 150 persons (Fig. 4). By combining all of the rooms which are similarly equipped, a total of 750 students could get a simultaneous close-up.

The impact of TV intimacy on instructional methods is obvious in any subject area in which a good close look is a part of the learning process — Medicine, Physics, Art, Engineering and Chemistry, among others.

A further point is that if the instructional staff makes TV recordings it can develop a library of materials that can be re-used. Apart from video-tape recording (which requires a TV system to reproduce it), the kinescope film provides a teaching unit which makes it unnecessary to re-stage laboratory demonstrations. The film can be used repeatedly at the convenience of the instructor without resorting to TV transmission. While the quality of kinescope film is certainly not equivalent to that of 16mm, it is generally adequate for most instructional situations. With multiple cameras, lower shooting ratios and effects which can be handled in the control room rather than the darkroom, kinescope recording is considerably less expensive than motion-picture production.

In addition to the units included within the campus-wide grid, several other systems exist at Ohio State for purposes related more to telemetry research than to instruction. Two cases in point are the installations of five cameras in the Department of Aviation Psychology and three in Welding Engineering.

Although these units do not require operational or production assistance, maintenance of their equipment is a concern of the Telecommunications Center. Altogether there are something like 25 cameras and related gear which are maintained by our engineers.

The Telecommunications Center is also involved in two other areas of university life. One is the coursework in TV. As in most universities, instruction in TV Production is offered through various academic departments: Speech, Journalism, Education, etc. WOSU-TV cooperates with these departments, providing them with equipment and facilities essential to their laboratory requirements. To provide workshop situations in which advanced TV Production students acquire in-service training (as well as up to $1.25 per hour) the Center furnishes the station with floor crews and cameramen for as much as 20 hours per week.

The other major area is that called Instructional Television, which provides for institutes and seminars. This function serves as a resource center for MPATI, the Midwest Program for Airborne Television Instruction. Also, the Institute for Education by Radio and Television, the oldest national convention of educational program personnel, flourishes under the auspices of the Center.

Operationally, television has proved to be of multiple value to the educational needs of Ohio State. This year was bigger than last year by whatever measures you care to apply; next year will be bigger still. What is foreseen is the increasing use and acceptance of television systems and techniques as an integrated and normal facet of university life. Although the future promises even greater growth, our present stage of development already illustrates the business of television in the university.