

TEACHING BUSINESS LAW BY CLOSED-CIRCUIT TELEVISION

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Trend of Student Population.

The increase in student enrollment in our public schools this fall will approximate two million students. This trend is bound to result in a sharp increase in our college enrollments within the next few years. Since 1930 the proportion of college-age people actually entering college has increased by about 1 per cent per year until now it is more than 30 per cent. Back in 1900 it was but 4 per cent. By 1970 the population of Penn State is expected to jump from the present 14,000 to 21,000 students. In the same period the University of Minnesota expects its student body to increase 150 per cent. The universities of Rhode Island, Delaware and Illinois expect to double by 1970 or 1971, the University of Georgia by 1963. North Carolina's State College, which has doubled in eight years, expects to double again by 1970. Montana State College and Western Michigan State College look for nearly tripled enrollments by 1970 or 1972. Most colleges and universities can expect at least a 100% increase in student enrollment within the next fifteen years.

Educational Policy.

This trend with its encumbent expense is likely to bring into sharper focus the perennial question as to who should receive a college education. Many educators contend that there are now too many unqualified men in college. According to their view it is better, as a matter of educational policy, to maintain the "quality" of higher education. A good many people entertain a different idea. As expressed by President Eddy of the University of New Hampshire, "One of our problems is the student who thinks he has just as much right to attend the state university as he does to drive on state-maintained highways." Dr. Eddy does not subscribe to this view, but adds, "Our philosophy is a dedication to a common good. If this is our job, we'll do it, and try to do it well." One thing appears to be reasonably certain. Educational television is quite likely to become an important factor in the solution of the problem.

Open Circuit Television.

Institutional instruction by television is comparatively recent. (1) In 1951 Iowa State College broadcast a nine-lesson television series over its college station WOI-TV. The results were announced as satisfactory, although no comparison was made with regular instruction. (2) In 1951 Western Reserve University offered two courses in Elementary Psychology and Literature over station WEWS in Cleveland. In this experiment TV students had median raw scores 17 points higher than conventional class students. (3) In 1953 Iowa State College offered a course in Elementary Psychology, again over station WOI-TV, and (4) in 1954 the University of Houston offered courses in Elementary Psychology and Biology over radio station KUHT-TV. These were, I believe, the first attempts made by colleges or universities to broadcast college courses over public broadcasting facilities, but many such experiments now are pending. As this is written, a press despatch states that the first course for college credit ever offered

over television in Arizona will begin next month over KPHO-TV in Phoenix. This course is to deal with crafts for elementary school teachers, and is to be broadcast on Sunday afternoons, with college credit worth two hours for students who register and come to Arizona State College at Tempe at the end of the course for an evaluation session. There is implied in this announcement the main disadvantage of this type of instruction, namely, lack of supervision over students taking the course.

Closed Circuit Television.

Closed circuit television has two very important advantages over the open circuit or commercial television apparatus. First, it is much less expensive. Second, any number of units may be used at the same time. A college operating a licensed public television station can broadcast but one course at a time. A college using closed circuit television may offer any number of courses at the same time. Closed circuit television is a recent innovation, although it has been used during the past few years by several branches of the military services. It seems probable that in these military experiments, the usual and more expensive commercial apparatus was adapted to closed circuit use. This may account for the observation in one of these experiments that "only on a real mobilization basis would televised instruction be economically effective."

Experiments with Closed Circuit Television.

It seems obvious that educational television, as an integral part of classroom instruction, can be made effective only with the use of closed circuit facilities. Experiments thus far have been important, but rather spotty. (1) In 1952 Montclair State Teachers College at Montclair, New Jersey, broadcast a complete day's schedule to 13 public schools in Bloomfield and Montclair. (2) In 1954 the same college broadcast nine lessons in American History for fifth grade. One of the objectives in these experiments was to test the economic feasibility of televising outstanding teachers. (3) In 1955 closed circuit television was tried at Chicago Teachers College, but only as an aid to regular instruction. According to these experiments, educational television by closed circuit was as effective as conventional classroom instruction, and in some of the comparisons it was more effective for lower aptitude groups. Stephens College is now advertising a complete course on "Great Ideas" by closed circuit, and is borrowing for the purpose what is described in the announcement as a master teacher from the University of Chicago.

College Courses by Closed Circuit.

According to a recent study by the Joint Committee on Educational Television, 29 universities and colleges are listed as having closed circuit facilities. Of this number, 17 colleges claimed the use of closed circuit for classroom instruction, but seven were in the medical schools. With three exceptions, the University of Iowa, Michigan State College, and the Pennsylvania State University, closed circuit television was used only as a supplement to regular instruction. Iowa offered a discussion course in Comparative Foreign Governments as a full length course. Similar experiments were conducted at Michigan State. More will be said of the Penn State experiments. As this is written, a press despatch from Pocatello, Idaho,

declares that in the fall Idaho State College and the Pocatello District School System will jointly inaugurate what is inaccurately described as "the first such experiment in closed circuit television education in the world."

Penn State Experiments.

During the past semester the Ford Foundation, through the Fund for the Advancement of Education, sponsored at the Pennsylvania State University the first scientific, or perhaps I should say professionally competent, comparison of closed circuit televised instruction with regular classroom instruction. These were controlled experiments. The two methods of instruction were duplicated with meticulous detail, even to the point of selecting comparable groups of students measured by their previous demonstrated scholarship. The same teachers taught the same courses to both televised and nontelevised groups, and as nearly as possible in exactly the same manner. The courses which were used as the basis of the experiment were General Psychology and General Chemistry. At the last moment a third course was added, Psychology of Marriage, but only because of a heavy enrollment in that course and the lack of a teacher for more than one section. No attempt was made in that instance to set up a duplicate nontelevised section. The project was under the general supervision of Dr. C. R. Carpenter.

Incidents of the Penn State Experiment.

The results of the Penn State experiments are being published under the title, "The Application of Closed Circuit Television for Teaching University Chemistry and Psychology." The kind of equipment used, the cost of such equipment as compared to the more expensive commercial broadcasting apparatus, the operating staff, and other details are set forth in that report. Some of the incidents of the experiment are sufficiently interesting to mention. First, two fixed cameras were used in the originating classroom, one to televise the instructor and the other to televise blackboard illustrations. Second, some of the experiments in chemistry, which were too small to be observed clearly even by the students in the televising classroom, were televised at close range and exhibited on receiving sets in both the originating classroom and the receiving classroom. Third, the teachers of chemistry complained that they were at some disadvantage in not being able to use colored chalk, since the only impressions on the receiving sets were in black and white. Fourth, two or more television receiving sets were used in the classrooms, one in front and the others on the side and at an angle facing the students. These sets had 24-inch screens.

Comparative Scores.

Three classroom audiences were used for each of the two courses, first, the class in the room in which the course was televised by the cameras, second, the class in the room in which television receiving sets were installed, and third, the class in the room in which no television equipment was used. For the purpose of comparison these rooms may be designated as the originating classroom, the receiving classroom, and the standard classroom. It should be said at the outset that the class in the standard classroom, in which no television was employed at all, made the highest median score. In General Chemistry it was .43% higher than the raw median score in the originating classroom, and 1.53% higher than the raw median score in the receiving classroom. In General Psychology, it was 1.18% higher than the median grade in the originating classroom, and 2.45% higher than the median

grade in the receiving classroom. On the other hand, in the course on the Psychology of Marriage, all differences favored the television receiving class over the originating class.

Significance of Scores.

One of the main purposes of this experiment was to determine whether students learn an equal amount, or learn less, by closed circuit televised instruction. The differences as measured by the scores were not statistically significant, although this did not mean that the two modes of presentation were equally effective. It did mean that closed circuit television could not be rejected as a successful method of classroom instruction, at least in the subjects used as the basis of the experiment.

Student Reactions.

Another important purpose of the experiment was to measure student reactions to instruction by closed circuit television. The bulk of the students reported that they thought they were learning "about the same" or a "little less" by television. The most common reaction was that they heard better, rather than saw better. Many were influenced by the novelty of college instruction for the first time by television, and this may have had some bearing on the scores of the classes in the receiving classrooms. Nearly all the students agreed that the instruction was superior, a reaction which would be expected since only the best teachers were employed. Another by-product was uniformity in grading. An attempt was made to have the students rate the course in comparison to other college courses. As might be expected, students in the originating classroom rated the course higher than students in the receiving classroom. There were a number of criticisms from the students. These may be summed up as lack of interaction between student and teacher, boredom, lack of color, and vision limited to what the camera actually disclosed.

Unanswered Problems.

It must be admitted that classroom instruction by closed circuit television has proved to be successful in General Chemistry and General Psychology, given teachers of superior ability. Many questions still remain unanswered. Is this method of instruction acceptable to the faculty and to the profession? Is it restricted to teachers of superior ability? Is it practicable only for basic or popular subjects, or could it be successfully applied to all courses in which large numbers of students are enrolled, e.g., mathematics, accounting, or English composition? Would it be effective as a means of instruction on the graduate level? And is it economically feasible? This last question appears to be somewhat presumptuous, since the traditional immunity of colleges and universities from inquiry into the costs of instruction in the past has been a sacred cow in the good American tradition, at least when confused with educational values.

Future Experiments.

It is obvious that the experiments should be continued until at least some of these problems have been resolved. Next semester, or I might have said next week, additional courses will be added as a part of the program, two of which are in the area of Economics and Commerce, namely Principles of Economics and Principles of Business Law. The law course selected is the beginning course on the law of contracts, with an introduction to the nature of legal institutions.

Business Law Course.

Since I am to be the instructor in one of these courses, I think I should explain that Business Law was chosen because of student interest in the course, and not because of any shortage of teachers. More than 16,000 students have now enrolled in my courses at the Pennsylvania State University. During the past eight years the average enrollment has been 425 students per semester, and in the course to be offered by television, the average enrollment has been 125 students per section. By combining two sections it will be possible to lecture to 100 students, and at the same time pipe the lecture by coaxial cable to three classrooms of fifty students each. It is part of the plan to add an additional section of 100 students, in the same subject but without television equipment, for the purpose of comparison. This project is based upon an average enrollment in my courses of 425 students per semester. Usually the total enrollment in my work is higher during the first semester, when students first begin the study of law. Last year, for example, my student load in the beginning and advanced courses was more than 600 students during the first semester. In that event the televised lecture will be piped to six classrooms of fifty students each. One innovation will be made in this experiment. In view of student criticism last semester, students will exchange places in the television originating and receiving rooms at the end of each examination period, so that all the students will spend at least a part of the semester in the classroom with the instructor.

Conclusions.

Enough has been said to indicate some of the problems involved in the development of television as an instrument of formal education. It is possible to predict that this instrumentality will play an important role in the future in the planning of educational facilities, including buildings, equipment, and the type of classrooms for future use. It should also ease the pressure of teacher shortages that are bound to arise with a growing student population. More important, educational television promises to improve the quality of education. For one thing, it sounds the death knell of another sacred cow, namely, the privacy of the classroom. A special room with plush front seats may now be provided for all echelons of the administration, who may secretly appraise the performance. It is also possible to expand the seating capacity of this room to accommodate teachers in training. Not the least important, more students can visit and observe clinics, unusual experiments, work shops and the like, and the outside world and events can be brought into the classroom by using films to implement the voice of instruction.