The history of instructional television, the development of the telecourse concept, current uses of instructional television, economic factors, and cooperative arrangements are considered. After the initial approach of presenting a professor lecturing as if before a class, producers of instructional television began to dramatize the subject, adopt a documentary format, and eventually, develop the telecourse concept. Telecourses combine often-sophisticated television programs with related printed materials. Telecourses are either produced for instruction or produced originally for a general audience but have suitable content and quality for instructional purposes. Currently, colleges and universities make extensive use of on-campus, closed-circuit television systems for instruction; however, few direct substantial effort to broadcasting instructional television to off-campus audiences. Some barriers to greater use of instructional television by four-year institutions are identified. The following developments in video technology are covered: satellite transmission systems, cable television systems, narrowcast technology, instructional television fixed service, and videocassettes and videodiscs. It is suggested that 70 percent of the costs of instructional television are associated with acquiring and modifying the instructional materials and providing programs, while 30 percent of the total costs are for institutional support services. Consortia are a means to produce high-quality programs or to arrange for more efficient use of available telecourses. A bibliography and a list of organizations involved in developing the field of instructional television or providing information on it are included. (SW)
Instructional television—Higher education without commercial interruption

Carol Herrnstadt Shulman

Instructional television is emerging as a potentially important tool for reaching students in postsecondary education. In 1974-75, more than 1,500 colleges and universities used television for instruction, and 255 institutions offered complete courses on television. Some 1,884 courses were offered, enrolling nearly half a million students (Higher Education Utilization Study 1979).

But these figures are small compared to the audiences that initial television programmers believed could be reached. Thus the audience could be as large as 64 million—the total high school graduate population over 25 years of age that has not completed college. Of this group, 6 million are in college and an additional 12 million have taken some college but currently are not enrolled. Unstructured television is particularly attractive for the individuals in this population who are highly motivated learners and have good basic learning skills.* Most often, persons with these characteristics are mature adults (Zigerell 1979), as is a segment of the nation's population grows, colleges and universities are taking an increased interest in programs directed to those prospective students. Such interest combines with new technologies, new course materials, and new cooperative arrangements among producers and users, to promote a growing use of instructional television.

History of instructional television

Current interest in instructional television recalls its early heyday during the 1940s when 114 colleges and universities teamed up with television stations to present televised lecture courses (Carlisle 1974). From this optimistic beginning, instructional television fell into a decline, leaving only a few survivors such as CBS-TV's 'Sunrise Semester' and the City College of Chicago's TV College.

The reasons for the disappearance of much of this programming are instructive. First, before the advent of television, lecture courses were broadcast live and stations provided studio time for instructional television only at hours inconvenient for potential students. Videotape provides greater flexibility in determining when courses may be offered. Second, even when good broadcasting time was available, there often was not enough coursework produced to attract students interested in courses for credit. And third, producers overestimated the potential student audience in a given geographic region and did not realize that long-term instructional programming must draw from a heavily populated region in order to net a sufficiently large student audience (Zigerell 1979).

Telcourses

The telcourse represents the most recent stage in the evolution of instructional television, and it is rapidly becoming the dominant mode in the field. Telcourses combine often sophisticated television programs with related printed materials to produce a unique educational experience.

Telcourses are an examination of a body of knowledge and information through the use of sight, sound, color, movement, and print in a manner designed to stimulate and maintain development and clarify and quantify a carefully designed and integrated series of learning experiences (Mittelstet 1979 quoting Platz)

Telcourses may originate either as courses for television or as courses from television, also called "wrap-around courses" (Munshi 1980). In the instance, the telcourse is produced for instruction and is typically on a standard academic subject such as government or biology. The user institution arranges for rental or purchase of the course and for broadcast time, which is not usually during prime time. Printed materials are developed in conjunction with the video component. In contrast, the "wrap-around course" is a television series that was produced originally for a general audience and was broadcast during prime time on either a commercial or a Public Broadcasting System station. Its content and academic quality, however, make it suitable for instructional purposes. Therefore, printed course material is developed around the original program (Munshi 1980). In either instance, the telcourse is usually about 15 hours long, either as 30 half-hour segments or as 13 to 15 one-hour segments.

Although the television program is at the heart of the telcourse concept, printed materials and other educational activities also are essential. The basic complement to the video program is the study guide, which provides the student with learning objectives for each program and for the entire course. The study guide also includes self-graded pretests, study questions for the television program and for reading assignments, enrichment activities (required and optional), and self-graded or mail-back graded posttests (Mittelstet 1979; Munshi 1980).

Campus liaison is necessary in the telcourse concept. The extent of student-faculty relations depends on how the individual institution decides to organize and administer the telcourse.

*Peter J. Diet (projects manager, Educational Activities, Corporation for Public Broadcasting) December 9, 1980, conversation with author.
Contact may be limited to a single event, but usually includes other graded tests as well as several ungraded review sessions on campus. In a community setting, many institutions arrange for television courses by contacting with faculty representing the course.

Other television courses are arranged according to the demands of the subject and the needs of the community. They may include a nighttime, non-televised class, and learning activities such as group work or laboratory exercises. For an English composition course, for example, one experienced graduate of the program said that "the curriculum and materials must provide a network around which faculty members are focused on a study model." (Gross, 1978a, p. 10, quoting R. B. Olsen.)

Current uses of instructional television

Colleges and universities have been pioneers in the closed-circuit television study. (Higher Education, Utilization Study 1978.) Higher education has shown substantial effort by broadcasting instruction to diverse student audiences.

Colleges and universities probably are taking advantage of the new developments in technology that can reach adult audiences not presently served by other campus for instruction. For example, ACSN reports many institutions that had not previously used instructional television.

For your institution to use television instruction effectively, it is important to make sure that the television technology is available and that the channel is not already occupied by another program. In the first instance, the requirements are for a perceptible improvement in quality over broadcast television. The development of telecommunication satellites has provided a way to achieve this. The channel of television that is available for institutional use is one that is not being used for any other purpose. The survey was conducted between June and August of 1978. (Hershey, 1978b.)

These barriers to the use of instructional television are inherent in the current system of development and control of such services. As a consequence, closed-circuit television is not yet widely used in educational institutions. In the private sector, however, there are a number of experiments that have been conducted. (Brown, 1927; and B. Olsen, 1978a.)

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Video technology

Rapid developments in video technology can cause a communications revolution. There is a belief that the communications revolution will be as great as the telecommunications revolution. One factor in the revolution is the increasingly widespread use of television in the classroom. That is, new communication systems are being set up that allow students to watch and study with more opportunities for in-house viewing.

Satellite communications hold the key to this development. These communications provide a way to broadcast instructional materials to a large geographic area.

The number of television channels available in the United States is limited, so that the cost of broadcasting is high. However, the satellite provides a way to broadcast instructional materials to a large geographic area.

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needs of their community" (Smith 1979, p. 10) are to project that by 1985 cable television will have about 15 million subscribers (Barham 1980).

Instructional television fixed service

The Federal Communications Commission (FCC) ruling, May 1979, has made available in the video broadcast part of the experimental station in educational television. These 54 experimental one-channel microwave television systems in consortia may be used by institutions or by consortia with individual institutions. However, the FCC may have some influence on the ability of separate institutions to produce their own programs by the FCC's decision to allow the three major broadcast networks to take over the production of the Educational Television Service programs. This decision will affect the ability of individual institutions to produce and transmit their own television programs (McCabe 1979).

Institutions buy U.S. license and utilize programs produced by the consortiums. As far as instructional television is concerned, consortia provide a wide array of programs in all academic levels from high school to graduate school (Hershfield 1981). In the Los Angeles area, the universities involved include the University of California, Southern California, California State Polytechnic College in Pomona, and the University of California at Irvine. These consortia offer courses in various fields for students in a variety of institutions. A sample course service fee structure may be as follows:

- Telecourse instruction is provided to the student, based on some materials, the FCC decision, the price of equipment, and the market for instructional materials. The other 15 percent of the total costs goes for institutional support services. The other 20 percent of the total costs goes for institutional support services (McCabe 1979).

Thus, enrollment is the key in determining how expensive telecourse instruction will be.

Economic factors

The cost structure for telecourse instruction is an important factor in the costs of instructional television. The total costs of the costs of traditional instruction are associated with acquiring and modifying the instruction materials and developing programs. Approximately half of this total cost is for the costs of the total costs—goes for air time and faculty salaries. Instructional support services make up the final 50 percent of the costs. With traditional instruction, however, faculty salaries account for 45 percent of the total costs, while the equipment goes for instructional materials. The other 20 percent of the costs goes for institutional support services (McCabe 1979).

Consortia

Colleges actively involved with telecourses may form consortia to produce high-quality programs or to arrange for more efficient use of the available telecourses. These consortia may be organized on an ad hoc basis to work on the development of a single

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*David Buckley, communications director, Center for Educational Telecommunications, April 5, 1981, conversation with author.

**Fred W. Hershfield, executive secretary, Joint Council on Educational Television, January 5, 1981, conversation with author.

***Richard Permaneter, instructional television, Dallas County Community College District, January 21, 1981, conversation with author.
Courses can and frequently are built into the telecourse system. Although attitudinal change often is difficult to achieve, some steps to encourage faculty approval of telecourse (Hershfield 1980). Through the components of the telecourse (e.g., study guide, test, and faculty-student conferences), faculty have an opportunity to modify telecourse instruction to suit their perception of how the course should be taught.

Academic administrators and faculty need to investigate how instructional television may help them meet their institutional goals so that they can make a rational decision on whether they should use this approach. It is probable that if institutions fail to become involved in instructional television, private industry and new types of educational organizations will step in to provide educational television services to the adult population.

Information resources

Described below are several organizations involved in developing the field of instructional television or providing information on it:

- Adult Learning Programming Department, Public Broadcasting System's Educational Telecommunications Program Service (PTV), 475 L'Enfant Plaza SW, Washington, D.C. 20024; Dee Brock, director. The Adult Learning Programming Department, established in July 1980, plans to make available programs to participating PBS stations and cooperating colleges. Three kinds of courses will be offered: college credit courses, informal learning courses and programs, and professional development courses and programs. Participating Institutions will assign the amount of credit to be awarded and provide fee for student tuition.

- The Center for Learning and Telecommunications, American Association for Higher Education, One Dupont Circle, Suite 780, Washington, D.C. 20036; Maureen Kressel, director. The Center assists postsecondary institutions in exploring the potential of technology-based programs. Projects include the synthesis and organization of information already available on telecommunication but currently scattered, a guide to major telecommunication models, and a handbook of alternative technologies.

- Corporation for Public Broadcasting/Annenberg Higher Education Telecommunications Project, CPB, 1111 16th Street NW Washington, D.C. 20036. Under a 15-year, $150 million grant from Walter H. Annenberg, publisher of TV Guide, CPB is planning to produce college-level courses through existing and developing communications systems. The funds will be used to develop telecommunication materials and courses to be offered in cooperation with higher education institutions for undergraduate degree credit.

- Joint Council on Educational Telecommunications, 1126 16th Street NW, Washington, D.C. 20036; Frank Norwood, executive secretary. The Council is an organization of nongovernmental associations designed to monitor and inform its members about current technologies that may affect opportunities for education television.

- National University Consortium for Telecommunication in Teaching, University of Maryland University College, College Park, Maryland 20742; Allan Hershfield, executive director. Launched in 1980, the NUC plans to make a complete bachelor's degree program available to home-based adult students through television and the directed study learning system developed by the United Kingdom's Open University and the University of Maryland University College. To date, seven institutions are participating in the program, with broadcasts over ten local public television stations and two cable systems.

- University of Mid-America, P.O. Box 82006, Lincoln, Nebraska 68501. Founded in the mid-1970s, the UMA is governed and administered by a consortium of 11 midwestern universities. It
Bibliography

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