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ABSTRACT

In an effort to improve access to education and to better serve residents of its 600 square mile district, Waubonsee Community College (WCC), in Sugar Grove, Illinois, utilizes telecourses, audiocourses, and live classes via microwave transmission to deliver instruction. Video and audio courses utilize prerecorded instructional materials, textbooks, and study guides, and allow students to proceed at their own pace. The prerecorded materials may be checked out from the Waubonsee Learning Resources Center, local public libraries, and some video stores. WCC also operates a four-channel Instructional Television Fixed Service to present teleconferences and transmit prerecorded telecourses to local cable companies for distribution, and has recently installed a low-power UHF station. Perhaps the most unique application of telecommunications technology in use at WCC is the live instruction delivered over its microwave system, Telecommunications Instructional Consortium (TIC), a specially licensed communications medium that allows for closed circuit transmission of audio and video signals between six campuses and two-way communication between instructors and students. The system was designed to promote user friendliness for professors and to ensure reliable operation by keeping the teaching environment as invisible as possible. Each semester, WCC averages 30 credit-college courses via TIC covering such topics as speech, child development, psychology, accounting, criminal justice, history, health, Spanish, and English as a Second Language. Over 6,000 students have participated in the system, and a 1991 study showed that students taking courses via the TIC performed as well as students in the traditional section of the same course. (MAB)

Reaching Students through Distance Education

Lynn Blakesley
Steve Zahn

Paper presented at the 9th Annual Meeting of the
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"Reaching Students Through Distance Education"

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Waubonsee Community College is a two-year, public, post-secondary institution located in Sugar Grove, Illinois, about 50 miles west of Chicago. The College also operates a campus in downtown Aurora, a city with a population of 99,581. Waubonsee's district covers 600 square miles, of which the largest area is rural. Some of the residents of this area must drive 30 miles to the main campus located in Sugar Grove, or 41 miles to the campus located in Aurora. In an effort to provide access to courses and to better serve the students who have difficulty attending traditional classes on campus, Waubonsee has investigated several methods of utilizing technology to deliver instruction. Telecourses, audiocourses, and live instruction via microwave, are among the methods used to provide alternative access to academic programs.

Telecourses are complete instructional systems that include videotapes, a textbook and a study guide. As with any other college credit course, an instructor is assigned to each telecourse. Students proceed in a telecourse independently by following the study guide, reading the textbook materials and viewing the corresponding videotapes. The videotapes may be checked out from the Waubonsee Learning Resources Center, local public libraries, and some video stores. Students can also view Waubonsee telecourses on local cable channels. Audiocourses are managed in the same manner as telecourses, except that the majority of the content is delivered via audiotape.

Waubonsee employs many telecommunications technologies to deliver instruction throughout the district. The College operates a four-channel ITFS system. ITFS stands for Instructional Television Fixed Service which provides a one-way video/audio transmission from the Sugar Grove campus. The College uses

ITFS transmission to provide Federal Emergency Management Agency teleconferences to the Aurora Department of Emergency Services. Two ITFS channels are used to transmit taped telecourse programming to local cable companies for distribution to subscriber homes in the College's district. Instructional programming via cable television will be enhanced with the addition of a cable television access studio to be located at the Waubonsee Aurora campus.

Waubonsee recently completed the installation of a low-power UHF station, Channel 54. Initially the College will use Channel 54 to provide a bulletin board service highlighting Waubonsee events and to televise special events programming. Future plans include using Channel 54 as a medium for the delivery of instruction and training to businesses and homes. Waubonsee has also utilized satellite delivery to provide instruction in the field of interpreter training. Four national teleconferences have been produced and uplinked from the Sugar Grove campus. The most recent teleconference was also broadcast over Channel 54.

Perhaps the most unique application of telecommunications technology in use at Waubonsee is the live instruction delivered over the College's microwave system, known as TIC. TIC stands for Telecommunications Instructional Consortium. The present system links the main Sugar Grove college campus with the downtown Aurora campus and with Kaneland High School, Oswego High School, Plano High School, Waubonsie Valley High School, and the Illinois Mathematics and Science Academy. The members of the consortium began sharing courses over the TIC system in the Fall of 1988.

All instruction is delivered live using the two-way, interactive microwave system. The microwave system is a specially licensed communications medium that allows for closed circuit transmission of audio and video signals. Each distance learning classroom within the network is linked to Waubonsee Community College through a microwave path. As each path is routed from the member school, a star

configuration of communications links is formed. This allows for the coordination of classrooms at selected locations to meet the needs of any teaching requirement. The instructor can see and hear the students at all of the sites. The students are also able to see and hear one another, as well as their instructor.

Several microwave channels can be added to an established microwave path creating two or more distance learning classrooms at a single location. Waubonsee has two independent microwave channels over a single path between the Sugar Grove and Aurora campuses. There are two distance learning classrooms at each campus, for a total of four Waubonsee classrooms. In the evening the College utilizes the distance learning classrooms located at the member high schools as extension sites for college credit courses.

The heart of Waubonsee's TIC system is an instructor initiated router control system. This system gives the instructor full control over the technical functions that send and receive images from the respective distance learning locations. At the beginning of each class period, the instructor selects the sites that will receive the instruction. This faculty selected configuration is electronically established and maintained at Waubonsee's central switching facility. Throughout the class period, the instructor selects the video that is seen by students at the origination and remote locations. The instructor can select a view of their origination classroom, a view of materials on their podium, or their image to share with students at the remote locations. At the end of the class period, the classroom configuration is electronically cleared and made ready for the next class. Waubonsee's technical center allows for several independent teaching situations to occur simultaneously. Thus, several classes can be offered from various locations within the network at any time.

Waubonsee Community College has made a significant investment in the network to ensure reliable operation. Every effort is made to keep the technology of

the teaching environment as invisible as possible. Minimizing the instructor's operation of the network to simple keystrokes on a control panel greatly reduces the feeling that the distance learning system is a complicated operation requiring extensive training. Instructors quickly forget that they are communicating with students many miles apart and realize that interaction with others is as easy as conversation.

Faculty interested in teaching on the TIC system participate in a three-day workshop offered by the College every August. During the workshop faculty learn to operate the equipment in the distance learning classroom. However, the majority of the workshop time is spent concentrating on techniques that allow for maximum interaction with the students at the distant sites. Workshop participants practice teaching to each other which gives them the experience of being a distant site student. It is this experience that best prepares them for the challenges of teaching over a distance learning system. Participation in faculty training is voluntary, as is teaching on the TIC system, however a stipend is paid for the time spent during the workshop. Eighty-nine instructors have participated in the summer workshops. Of that number, 46 have gone on to teach on the TIC system.

Each semester the College averages 30 college-credit courses on the TIC system. Course offerings include speech, child development, psychology, accounting, criminal justice, history, health, Spanish, and English as a Second Language. To date 6,000 college students have participated in this system. In 1991 consultants from the Instructional Technology Department at Northern Illinois University conducted a study to determine the instructional effectiveness of the TIC system. The success of the TIC students exceeded the expectations of the researchers. Students taking courses via TIC did as well as the students in the traditional section of the same course.

At the same time the TIC system is being used for college-credit courses, the high school members of the consortium participate in accelerated high school instruction. 450 high school students have taken courses in German, French, calculus, advanced placement English, advanced geometry, and topics in modern physics.

Illinois is actively involved in the development of a statewide telecommunications network that will facilitate distance education opportunities for all sectors of education. Waubonsee Community College played a key role in developing the statewide plan and the TIC system serves as the model upon which the statewide network will be built. The first phase of the statewide network is currently under development. In the Fall of 1993 Waubonsee Community College will begin sharing college-credit courses with Elgin Community College and McHenry County College.

Waubonsee Community College has been a leader in providing students with access to courses through a variety of alternative delivery systems. Through the use of various instructional technologies, Waubonsee continues to expand and enhance the quality of programs that are available to students.

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