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The use of technology in teaching second languages has been increasing dramatically over the past few years. University language departments and U.S. government agencies' language training divisions are implementing various technologies into the curriculum on a regular basis. Several school districts across the nation are creating special magnet high schools where technology, international studies, and second languages are emphasized. Technology is becoming a bigger part of both in-class and home study, as the traditional use of audio and films is supplemented by computer-assisted instruction and interactive media technologies.

THE COMPUTER AS CORE

The computer by itself has many capabilities for enhancing language learning but combined with other technologies'such as audio, video, modems and phone lines, and satellite dishes'the possibilities are even greater for the second language learner. *Information retrieval. Many databases, bibliographies, and multilingual dictionaries are now accessible to students for research and language learning purposes. Most information and dictionaries are stored on CD-ROM (Compact-Disc Read Only Memory). With a CD-ROM player (not like the one used for music, but one that can be controlled by a computer) attached by a cable to the computer, students can retrieve all kinds of data. By using a modem (a machine that permits one computer to communicate with another off-site via a phone line), students can retrieve information from other databases'even in other countries.

*Interactive audio. Computers can be used with an audio source to teach and test active listening skills. With the addition of a computer-controlled tape recorder or a CD-ROM drive, interactive audio lessons are possible. The computer permits fast access to a linear audio tape or instant access to audio stored on a CD-ROM. Visual information or activities, added via an authoring program, appear on the computer screen. Audio stored on computer disks takes too much space, so the storage of audio on CD-ROM, easily accessed by the computer, has greatly increased the use of audio lessons in an interactive environment.

*Interactive video. Computers controlling a linear video (VHS) player or a laser videodisc player provide interactive video instruction. As in the case of interactive audio, the computer can provide faster access to videotape segments (without the manual fast forward or reverse), and accompanying written material is provided on the computer screen. Stills or up to 60 minutes of motion video can be stored on a videodisc (a large silver disc resembling a 33 RPM record) instead of a tape. The student has instant access to any of the 54,000 frames per side of the disc. A special videodisc player, hooked up to the computer by a cable, is required for interactive videodisc activities.

*Local area networks. Computers linked together (in a classroom, lab, or building) via cables form a Local Area Network (LAN), which allows students to share the same software and peripherals, such as printers. In a lab setting, teachers do not have to load

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each computer with the software program--it is shared from a single computer (or a file server). In addition, certain LAN set-ups permit students and teachers to correspond with each other in real time or to conduct collaborative writing activities in the target language.

*Long distance networks are computers linked across long distances. With telecommunications software, a computer can communicate with another one thousands of miles away via a modem and phone line. This set-up provides an opportunity to communicate directly over a long distance network with other parts of the world--and in other languages.

*Satellite broadcasts. Satellites now beam programs from around the world. These can be captured using satellite dish--bringing foreign broadcasting right into the language classroom. A computer controls the position of a satellite dish to pick up the desired programs. These live broadcasts can be videotaped for later classroom viewing. If desired, a computer can generate characters on videotape, providing sub-titles in English or in foreign languages for these programs.

TECHNOLOGY AND LANGUAGE SKILLS DEVELOPMENT

One of the first steps in technology-assisted instruction is to decide which technological medium is the most appropriate one for the language skill(s) to be developed during a particular period of time. Some technologies lend themselves better to the acquisition of certain language skills than others.
*Computers and computer networks. Computer-assisted instructional (CAI) programs are ideal for fostering reading and writing skills in the target language. CAI can be used by groups or individual students within a classroom or media center, or over local or long-distance computer networks. Students waiting for a message to arrive from another classroom or another country are highly motivated to read that message, and in turn, to respond in writing to this real form of communication. With a basic word processing program, students can write short articles and compile and edit a newspaper based on their classroom exchanges.

*Interactive audio. With the addition of audio capabilities to personal computers via audio boards (or CD-ROM) with microphones for input and headphones for output, the audio-assisted computer is a virtual mini-media unit. With the hookup of a special tape recorder to the computer, interactive audio provides multiple possibilities to teach and test active listening skills. In computer-assisted audio, the printed screen comes alive with sound for the acquisition of listening and speaking skills as well as reading and writing skills.

*Video. In the case of video, the visual component, which is especially useful for cultural

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and paralinguistic information, is added to the oral/aural components of other technologies. Regular linear video is most useful in developing listening skills and creating cultural awareness. Video with target language subtitles can also serve in developing reading skills. Video enables students to observe the dress, food, climate, and gestures of the target culture.

*Interactive video. When the power of a computer is added to video that is pressed onto a disc for instant access of sound, vision, and text, the resulting interactive videodisc system can provide practice in all of the language skills. Students' skills in listening and reading as well as in writing and speaking can be greatly enhanced when these latter options are available on an interactive videodisc program. (Not all videodisc programs provide student audio input.) Cultural aspects of the video segments can be highlighted using the videodisc program.

TYPES OF TECHNOLOGY-ASSISTED ACTIVITIES

Once the specific technology and skill(s) to be developed have been matched as outlined above, the specific courseware and type of activity that are most appropriate must be selected or prepared. Traditional exercises provide various activities for the development of these skills, but technology-assisted activities can also be introduced into standard teaching techniques to enhance language learning.
*Speaking. Dialogues can be effectively used in developing speaking skills. Use of an interactive audio program allows students to create dialogues and to practice them with other students. Other task-based speaking activities can also be used effectively with interactive audio programs (Stone, 1991).

*Listening. Videotapes or interactive videodisc programs can provide excellent listening comprehension activities, given a good listening guide prepared for the students. Depending on the language level, students listen for just the main idea or jist of a segment, or they listen for specific facts in the video program.

*Reading. Reading skills can be substantially developed using computer-assisted instructional programs. Word-level reading skills (word recognition) are enhanced by activities such as cloze activities (every nth word of a text deleted), anagrams, jumbled words, and so on, which are found in many CAI software programs. To practice reading at the sentence level, computer programs provide practice in ordering words within a sentence, text reconstruction, or ordering sentences within a paragraph. Other CAI programs provide extensive (article or story length) reading comprehension passages with accompanying word helps and comprehension questions at the end of the selection.

*Writing. Technology-assisted activities such as fill-in-the-blank, multiple-choice, and

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true/false questions help students to write at the word level. Other types of software, such as databases and spreadsheets, provide students with practice in retrieving information and problem-solving skills. Word processors (in the target language) are ideal for compositions or free writing practice at the discourse level. Some word processors are bilingual and provide on-line assistance with dictionaries, spell checkers, and grammar helps. When technology is interactively used among students, cooperative writing activities are strong motivators to help students develop writing skills.

*Culture. Because of the visual component (with non-verbal behavior), video-based activities are well suited for observing cultural differences and similarities in a live context. Both video tape, including satellite broadcasts, and interactive videodisc programs provide ways of developing cultural sensitivity.

*Testing. Computer-assisted testing now provides a more comprehensive, fast, and accurate way of testing student language skills (other than speaking skills). Students can also self-test using CAI programs. Teachers can use testing in an instructional way given the right kinds of activities and programs.

CONCLUSION

With technology-assisted instruction, there are changes in both educator and student roles. Students are given more responsibility for their own learning, while the educator serves as a guide and resource expert who circulates among students, working individually or in small groups with a technology-assisted lesson. Educators observe more of the learning process in action and serve as a guide in that process.
The new technologies offer many possibilities to the second language learner. The effectiveness of these technologies depends on appropriate use by informed educators. Neither textbooks nor technology can replace the live, unprogrammed feedback and interaction of the language teacher.

REFERENCES & RESOURCES

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