Technology Integration

Berent, G. P. & Clymer, E. W. (2001). A Web-based initiative to infuse English across the curriculum for deaf and hard-of-hearing students. In Papers fromInstructional Technology and Education of the Deaf: Supporting Learners, K-College[On-line]. Available: http://www.rit.edu/~techsym. [AN 1734] *

This project describes the "Supporting English Acquisition" (SEA) Web site (http://www.rit.edu/~seawww) and outlines a collaborative, Web-based effort to infuse English teaching principles and methods into technical, math, science, social science, and humanities courses taken by students at the National Technical Institute for the Deaf (NTID). This broad-based effort involves faculty in NTID's Center for Research, Teaching, and Learning, the Center for Arts and Sciences, and the Center for Technical Studies, as well as peer tutors in the NTID Learning Center. Because English remains a formidable challenge to most NTID students, the goal of this "English across the curriculum" effort is to provide teachers with on-line professional development that will enable and empower them to promote their students' English skill development within the naturalistic context of their specific course content.

Implications

In view of the persistent English language difficulties experienced by large numbers of NTID students, the vice president and dean of the college have articulated the need to infuse English teaching principles throughout the college curriculum in order to enhance student success (NTID's Blueprint: Strategic Objectives 1999-2004). Faculty's incorporation of English teaching principles and methods into content courses through the guidance of the SEA Web site should have a significant impact on both teaching and learning. The impact on teaching is that participating faculty members will enhance the delivery of their instructional activities by incorporating simple suggestions that will provide their students with guidance and practice on essential English language structures and processes while simultaneously delivering course content. The impact on learning is that students will receive "English instruction" at the same time that they receive content instruction. Ultimately, the considerable increase in time devoted to English language practice - in naturalistic settings related to students' major subject areas - is expected to result in a significant improvement in students' English language skills.

Elliot, L., Stinson, M., McKee, B., Everhart, V., & Francis, P. (2001). College Students' Perceptions of the C-Print Speech-to-Text Transcription System. Journal of Deaf Studies and Deaf Education, 6, 285-298. [AN 1733]

C-Print™ is a real-time speech-to-text transcription system used as a support service with deaf students in mainstreamed classes. Questionnaires were administered to 36 college students in 32 courses in which the C-Print system was used in addition to interpreting and notetaking. Twenty-two of these students also were interviewed. Student ratings of lecture comprehension indicated good comprehension with C-Print, and the mean rating was significantly higher than that for understanding the interpreter. Students also rated the hard

copy printout provided by C-Print as helpful, and they reported that they used these notes more frequently than the handwritten notes from a paid student notetaker. Interview results were consistent with those for the questionnaire. Questionnaire and interview responses regarding use of C-Print as the only support service indicated that this arrangement would be acceptable to many students, but not to others. Communication characteristics were related to responses to the questionnaire. Students who were relatively proficient in reading and writing English, and in speechreading, responded more favorably to C-Print.

Implications

The rapid increase in the numbers of deaf and hard-of-hearing students participating in mainstream classrooms has challenged educators who are obligated to provide communication access to all their students. The C-Print speech-to-text transcription system provides an alternative support service to those students who continue to miss vital classroom information for various reasons. While no single support service can benefit all students equally, C-Print does offer students an additional means of communication access and is preferred by some students to more traditional supports such as interpreters and notetakers. Students in this study who preferred C-Print tended to be relatively proficient in reading and writing English and speechreading. This study contributes to the accumulating evidence that indicates that a speech-to-text transcription system, such as C-Print, is an effective way of increasing accessibility to information in the mainstream classroom for deaf and hard-of-hearing students. Evidence also supports the perspective that it is desirable to match support services to the needs and preferences of individual students, given considerations of cost and availability.

McKee B., Stinson M., Giles, P., Colwell, J., Hager, A., Nelson-Nasca, M., &MacDonald, A. (Fall, 1998). C-Print: A computerized speech-to-print transcriptionsystem: A guide for implementing C-Print. Rochester, NY: National TechnicalInstitute for the Deaf (NTID), Rochester Institute of Technology (RIT). [AN 1735]

C-Print was developed to help improve the classroom experience for deaf and hard-of-hearing college and secondary school students. Past research has shown that some deaf and hard-of-hearing students prefer transcripts of lectures to sign language interpreters or notetakers for acquiring information in courses. The system attempts to resolve the problems of cost and availability that have been apparent with stenography-based transcription systems. C-Print also offers notes of a much higher quality than those from an average computer-assisted notetaking system. The system is intended to improve access to the classroom experience for certain deaf and hard-of-hearing students.

Implications

This particular publication is aimed at professionals who wish to implement the C-Print system within their school or organization. The Manual has sections for administrators, teachers, coordinators of deaf and hard-of-hearing programs, and C-print operators. It discusses a variety of topics and issues related to successfully implementing the C-Print system, including cost and equipment. Other sections discuss communication with various audiences involved, including parents and classroom teachers, and information on recruiting and training C-Print operators.

Clymer, E.W. & McKee, B. (1997) The promise of the World Wide Web and other telecommunication technologies within deaf education. American Annals of the Deaf, 142 (2). [AN 1608]

This article provided a summary of a national survey that collected information on the instructional technology resources available at schools serving deaf students in the United States. One of the objectives of the survey was to determine the capability of schools to participate through the Internet in distance learning activities. The results showed that more than 70 percent of the schools have access to the Internet and World Wide Web (WWW). Because access to instructional technologies is only a part of an educational solution, this article continues with a discussion of some innovative uses of the Internet and also provides examples of specific applications for deaf students.

Implications

Teachers who have convenient and regular access to technologies such as the Internet and the Web and, more importantly, the skills to use such technologies, can offer a variety of new instructional options for their students. Those of us who work with teachers of the deaf as researchers, instructional developers, and teacher trainers also need to stay abreast of such technologies. Underling knowledge of how to use various technologies is up-to-date awareness of the kinds of technologies that are available to the teachers with whom we work. How we can most effectively train ourselves, the instructors with whom we work, and our deaf students is an issue that we have yet to resolve.

Keefe, B., Scherer, M. J., & McKee, B. (1996) MainePOINT: Outcomes of teaching American Sign Language via distance learning. Technology and Disability, 5, (4), 319-326. [AN 1684]

*MainePOINT * (Providing Opportunities for Integrating New Technologies) was a project to deliver instruction in American Sign Language to high school students via interactive television. The MainePOINT project was large and multi-faceted and NTID researchers became involved in a collaborative effort to determine the characteristics of students who are successful with such a distance learning format and those who are not. One hundred and twenty students from eight high schools throughout Maine registered for the course and completed a learning style scale and self-concept scale before the course began. Results indicated that students who were most successful and who liked this type of instruction the best (previous grade-point average was factored out) described themselves as "curious and excited about new things," had "a desire to control their own learning pace," had "previous exposure" to other technology in education and had "low anxiety" in using technology.*

Implications

Results of this study confirmed those found in a previous effort that examined satisfied and dissatisfied students enrolled in two NTID/Gallaudet University courses offered via distance learning. In both cases, successful and satisfied students were those who were familiar and comfortable with the technology being used and who valued the control and independence afforded by the instructional format. Students who described themselves as needing more interpersonal contact or who generally were not comfortable with technology were less successful. Teachers considering offering courses via distance learning should make every

effort to be sure their students are familiar and comfortable with whatever technology is being used.

Note: *[AN XXXX] represents a local NTID publications designation. Please include when requesting copies of these publications.*