

Multimedia and Web-based Strategies for Improving Postsecondary Outcomes for Students who are Deaf or Hard of Hearing

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Introduction

Academic and technological literacy skill levels can be potential barriers to success for individuals who are Deaf or Hard of Hearing in postsecondary education and in the workplace. In an effort to address these issues, the Midwest Center for Postsecondary Outreach (MCPO) at St. Paul Technical College and D E A F, Incorporated in St. Paul, Minnesota have collaborated on a project to research and write curriculum for computer-based multimedia educational programming for adult learners who are Deaf or Hard of Hearing. The project, entitled "Deaf Adult Education Curriculum Beyond 2000," explores the potential for using multimedia CD-ROM technology and the Internet in the context of postsecondary education. These technologies hold significant promise for adult learners who are Deaf or Hard of Hearing.

The "Deaf Adult Education Curriculum Beyond 2000" project has produced two multimedia learning tools which are customized for adult learners who are Deaf or Hard of Hearing. The computer-based curricula are entitled "Basic Computer Skills: Let's Be Friends" and "How to Use the Internet: A Different Kind of Library." This presentation includes a demonstration of the curricula in CD-ROM format and a discussion of their applications for use with Deaf or Hard of Hearing students in transition to postsecondary education or employment. MCPO is one of the four Regional Postsecondary Education Centers for Individuals who are Deaf or Hard of Hearing established in October of 1996 by the US Department of Education, Office of Special Education and Rehabilitation Services (OSERS). The goal of the Regional Centers is to enable postsecondary institutions across the nation to effectively serve students who are Deaf or Hard of Hearing. MCPO was established at St. Paul Technical College, and collaborates with the other three Regional Centers as a member of the Postsecondary Education Programs Network (PEPNet). The other Centers are the Northeast Technical Assistance Center at the National Technical Institute for the Deaf, a college of the Rochester Institute of Technology, Rochester, NY; the Postsecondary Education Network at The University of Tennessee, Knoxville; and the Western Regional Outreach Center Consortia at California State University, Northridge.

D E A F Incorporated was chosen by MCPO to collaborate on this literacy project because it is a community-based organization that has demonstrated strong leadership in the development of adult education and adult literacy programming. MCPO has been particularly interested in working with D E A F to develop a model for partnerships that would enable community-based agencies and college to work together and more effectively address the academic and technological literacy needs of students who are Deaf or Hard of Hearing.

Project Goals

The goal of the "Deaf Adult Education Curriculum Beyond 2000" project is the same as that of MCPO, to improve retention, graduation, and employment rates of Deaf and Hard of Hearing students in postsecondary education. As a result of many years of experience with adult learners who are Deaf or Hard of Hearing, MCPO and D E A F staff believe that social adjustment, academic performance, and employability may be enhanced by improving students' ability to use computers and the Internet effectively.

The ability to use computers and the Internet in a postsecondary setting and can help to level the playing field for Deaf and Hard of Hearing students. Students can benefit from the efficiencies of word processing, spell check, grammar check, spreadsheets, and databases. Access to the Internet provides access to a vast wealth of knowledge and information that students can use to enhance their classroom performance. Internet communication via e-mail with peers, family, faculty, disability services staff, etc. can reduce isolation for Deaf and Hard of Hearing students, and may help to improve retention.

Multimedia CD-ROMs

The strategy used by MCPO and D E A F to achieve the goals of improved retention, graduation, and employment rates of Deaf and Hard of Hearing students, is to develop interactive multimedia CD-ROM's designed for Deaf or Hard of Hearing adults. The computer-based curricula entitled "Basic Computer Skills: Let's Be Friends" and "How to Use the Internet: A Different Kind of Library" Parts I and II are intended for transitional learners preparing for college coursework or for adults seeking employment enhancement.

The curriculum is written at about the fifth grade reading level and includes graphics, photographs, and ASL video, which provide visual support for the text. The CD-ROMs are expected to be useful tools for transitional learners in high schools, transition programs, community-based rehabilitation programs, adult basic education classes, college remediation centers or classrooms, and college computer labs or libraries.

Curriculum Design

The designers of this curriculum began with several assumptions when developing the course material. The assumptions may be broken down into two areas: 1) *generalized*, for those who want to design courses using CD-ROMs for adult learners who are Deaf or Hard of Hearing and 2) for this *specific* project, aimed at adult learners who have no prior experience with computers or the Internet.

For the generalized assumption, the curriculum designers realize that multimedia and the Internet is not the answer to everything. Textbooks and teachers supplement the courses developed using multimedia CD-ROMs and the Internet. There is no substitute for human intervention and interface, especially for students who may be challenged by the English language. For this reason, a teacher's manual is available to accompany each of the CD-ROMs.

The curriculum designers for this project began with the assumption that the learners who would be using the CD-ROM's had no knowledge of how to use a computer. However, while the content is very basic, the design and graphics used on the CD-ROMs give an adult look and feel, so as to insure that adult learners are not feeling as if they are being treated like children.

A key design point was that learners from varying academic ability levels would be using this software. For this reason, rather than aiming at the "low" achievement point, we decided on a 5th grade reading level, with some higher grade level emphasis. The extensive use of graphics and videos supporting vocabulary enabled us to "push" the learners' grade levels above the assumed levels.

The final and, perhaps most important, design point was to use what was called an experiential and analogous approach to curriculum development. Designers decided that the best approach to use for the target population would involve hands-on interactive learning with heavy use of analogies. When the preparation for the development began, the curriculum designers conducted research of existing books, software and other materials on computers and the Internet. After reviewing the books, the designers felt they all lacked emphasis on experiential learning, and use of analogies was not emphasized. Furthermore, those materials assumed a very high level of literacy and assumed that the learner had some prior experience with computers.

An intrinsic aspect of multimedia computer-based learning is a high level of student interaction, which therefore requires that the curriculum be designed to provide continual experiential learning opportunities. The use of analogies are also an important component of multimedia course development, and a good example of the use of an analogy can be found in the introductory Internet course. In this course, the public library is used as an analogy for the Internet. Students learn that the Internet and libraries have similar characteristics, can both be used to conduct research, and that similar techniques are used for searching and browsing in both arenas.

The CD-ROM's were designed it for cross-platform usage. That is, both the PC and the Macintosh Platforms are taken into account. One example would be using the "enter" key. Most PC platforms call this "enter" while the Mac calls this the "return" key. Also, a generic approach for software branding was taken into account. The learner need not differentiate between specific brands of software for word processing or Internet browsers.

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Author note:

"Basic Computer Skills: Let's Be Friends" and "How to Use the Internet: A Different Kind of Library" Parts I and II, as well as teachers manuals are expected to be available for purchase by Fall of 1998. For more information, please contact Debra Wilcox Hsu via e-mail at <DWilcox@stp.tec.mn.us> or via phone at 612-221-1432.