

A Status Report on the Deaf and Hard-of-Hearing Cyber-Community Summit

Technology and Deaf Education Symposium
Wednesday, June 25, 2008 – 10:00 AM (W10D)
Location: LBJ-2590

Presenters

- E. William Clymer, RIT/NTID, Center on Access Technology
- Richard E. Ladner, University of Washington
- Jorge L. Diaz-Herrera, Rochester Institute of Technology

Summit to Create a Cyber-Community to Advance Deaf and Hard-of-Hearing
Individuals in STEM (DHH Cyber-Community)

June 25-27, 2008

- Led by Rochester Institute of Technology (RIT) National Technical Institute for the Deaf (NTID) and University of Washington (UW)
- Supported by the National Science Foundation (NSF)
- Held on Campus of RIT immediately following Symposium
- 50 leaders of support service provision for postsecondary deaf students in STEM (Science, Technology, Engineering, and Mathematics) programs

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Goals

- Report on the current state of online remote interpreting and captioning
- Identify the benefits and challenges associated with implementing a multimedia cyberinfrastructure to support d/hh students in STEM mainstreamed classrooms

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Background and Need

- Increase in number of d/hh students mainstreamed in STEM programs throughout United States
 - ▶ 10% US population (or 28 million) significant hearing loss
 - ▶ 1-2 million use ASL
 - ▶ 300 d/hh mainstreamed in STEM programs at NTID/RIT
 - ▶ ~400 d/hh mainstreamed in STEM in over 100 different universities

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Background and Need (con't)

- Growing need for skilled interpreters and captioners competent in STEM programs
 - ▶ Beginner, intermediate, and advanced levels
 - ▶ Lack of easy access to interpreters and captioners knowledgeable with scientific and technical language

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Proposal to NSF Based on a Unique Collaboration

- Richard Ladner's Work with Cyber-community at University of Washington
- Jorge Diaz-Herrera's interest in the RIT Center for Advancing the Study of CyberInfrastructure (CASCI)
- NTID's Interest in the Evaluation, Research and Development of Remote Services

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Project WWW Site

■ <http://www.ntid.rit.edu/cat/summit/resources.html>

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Plan of Execution

- 50 leaders divided into 6 constituency groups
 - ▶ Educational, Linguistic & Sign Language Researchers/ Developers
 - ▶ Coordinator of Support Services
 - ▶ STEM Faculty
 - ▶ Cyberinfrastructure Specialists
 - ▶ Educational Captioners & Interpreters
 - ▶ Students

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Plan of Execution (con't)

- Facilitators assigned to each group
 - ▶ Educational, Linguistic & Sign Language Researchers/ Developers
 - E. William Clymer, NTID/RIT, PEN-International
 - ▶ Coordinator of Support Services
 - Denise Kavin, NTID/RIT, PEN-International
 - Marcia Kolvitz, PEPNet-South, University of Tennessee
 - ▶ STEM Faculty
 - Richard Ladner, University of Washington
 - Caroline Solomon, Gallaudet University

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Plan of Execution (con't)

- ▶ Cyberinfrastructure Specialists
 - Jorge Diaz-Herrera, RIT
 - Gurcharan Khanna, RIT

- ▶ Educational Captioners & Interpreters
 - Rico Peterson, Northeastern University
 - Mike Stinson, NTID/RIT

- ▶ Students
 - Ellie Rosenfield, NTID/RIT
 - T. Alan Hurwitz, CEO NTID
 - Joshua Beal, Student Support

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Plan of Execution (con't)

- Each group to present to Summit gathering benefits and challenges associated with developing a multimedia cyberinfrastructure specific to area of expertise
- Break into groups to address challenges and develop recommendations on how to implement a multimedia cyberinfrastructure for d/hh students mainstreamed in STEM
- Each group to present to Summit gathering group recommendations

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Preliminary Findings:

Challenges Faced by D/HH Students

- Lack of easy access to support services at mainstreamed universities (isolation and communication barriers)
- Lack of awareness of available support services
- Identifying varying communication needs/preferences
- Visual dispersion
- Lack of quality interpreters/captioners in STEM/advanced programs / No standardized signs for technical language¹²

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Preliminary Findings:

Challenges Faced by D/HH Students (con't)

- Barriers to classroom participation/communication
(e.g., technology failures, multi-person discussions, etc.)
- Barriers to participation/communication outside of classroom
(e.g., excess noise, delays in wireless/cellphone
connections, etc.)
- Need to access captioned material immediately

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Preliminary Findings:

Challenges Faced by Faculty who Teach D/HH Students

- Change in teaching style due to remote accommodations /
Technical failures
- Need to pause for interpreters/captioners / Speaker needing
to repeat what was said to provider
- Multi-speakers / Need to change mic if not Plycom Mic
- Not knowing what to expect from d/hh students /
Communicating with student outside of classroom

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Preliminary Findings:

Challenges Faced by Faculty who Teach D/HH Students **(con't)**

- Change in teaching style large lecture vs. small group
- Teaching to “top of the class”

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Preliminary Findings:

Benefits of Developing Multimedia Cyberinfrastructure to Support D/HH Students in STEM Programs

- Ability to support multi-person discussion/collaboration
- Ability to support group work/group study
- Quality interpreters/captioners knowledgeable with technical language / All levels of STEM programs / Consistent/Reliable
- Enhanced captioning / Automatic speech to text / Easy access to saved text

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Preliminary Findings:

Benefits of Developing Multimedia Cyberinfrastructure to Support D/HH Students in STEM Programs (con't)

- Remote mentoring and support
- On-demand services
- Provides choice to variety of services and display devices /
Ability to combine support services
- Maximize learning through student engagement
- Instructor buy in / Teaching tools for educators

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Preliminary Findings:

Challenges of Developing Multimedia Cyberinfrastructure to Support D/HH Students in STEM Programs

- Training interpreters/captioners on technical language /
How to continuously evaluate interpreters/captioners / Lack
of baccalaureate programs to educate interpreters
- Interpreting diagrams/graphs / Inability to interpret visuals
affects comprehension
- Technology integration/availability / Need to facilitate
interoperability across platforms / Collaboration tools

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Preliminary Findings:

Challenges of Developing Multimedia Cyberinfrastructure to Support D/HH Students in STEM Programs (con't)

- Identifying and retaining remote providers / Need to support different settings (education, work, community)
- System integration, operation and administration (clearing-house) / Prioritizing requests / Scheduling / Storage
- Gaining buy-in and providing training (administrators, technical support, teachers, users) at universities

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Preliminary Findings:

Challenges of Developing Multimedia Cyberinfrastructure to Support D/HH Students in STEM Programs (con't)

- Associated costs / Varying resources of small vs. large programs
- Determining eligibility of services / Ensuring effective design of environment
- Captioning for online and distance learning
- Copyright of captioned materials

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Preliminary Findings:

Research-Development-Evaluation

- Benefits of cyberinfrastructure to educational, linguistic, cognitive and child development specialists
- Needs, preferences and performance??
- Technology development, implementation and business model to sustain services
- Best Practices!

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Reporting

- Summary report to be posted on Summit Web site in
October 2008

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