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

*June 25-27, 2008*

**Project WWW Site**

- [http://www.ntid.rit.edu/cat/summit/resources.html](http://www.ntid.rit.edu/cat/summit/resources.html)
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
Plan of Execution (con’t)

Facilitators assigned to each group

► Educational, Linguistic & Sign Language Researchers/ Developers
  o E. William Clymer, NTID/RIT, PEN-International

► Coordinator of Support Services
  o Denise Kavin, NTID/RIT, PEN-International
  o Marcia Kolvitz, PEPNet-South, University of Tennessee

► STEM Faculty
  o Richard Ladner, University of Washington
  o Caroline Solomon, Gallaudet University
### 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
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 cyber-infrastructure for d/hh students mainstreamed in STEM

- Each group to present to Summit gathering group recommendations
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 language
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
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
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”
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
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
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
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
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
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!
Reporting

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

http://www.ntid.rit.edu/cat/summit

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