

# Videoconference Communication Support

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& Persons with Disabilities Conference, San Diego CA

# Goals

- Description of RIT and NTID
- Use of Web-based Video for Instruction and Support
- NSF Funded Research
  - Series of interrelated grants
- Cisco Funded Research
- Initial Findings
- Ongoing Research & Reporting
- Discussion

# Rochester Institute of Technology

<http://www.rit.edu/overview/at-a-glance>

- Nine Colleges
- 17, 652 Students
- 3,756 Faculty Staff
- Technology Programs
- Diverse Community



# NTID Background

<http://www.ntid.rit.edu/about>

- Founded in 1965 by Congress
- 1,281 Students
- 200 Faculty, 300 Staff
- Communication Support



# NTID Instruction

- Direct Instruction
  - Approximately 500 students
  - Faculty sign and teach
  - Small classes
- Supported Instruction
  - Approximately 600 students “cross registered”
  - “Mainstreamed” classes with other RIT Colleges
  - Interpreters, Captioning, Notetaking, Tutoring

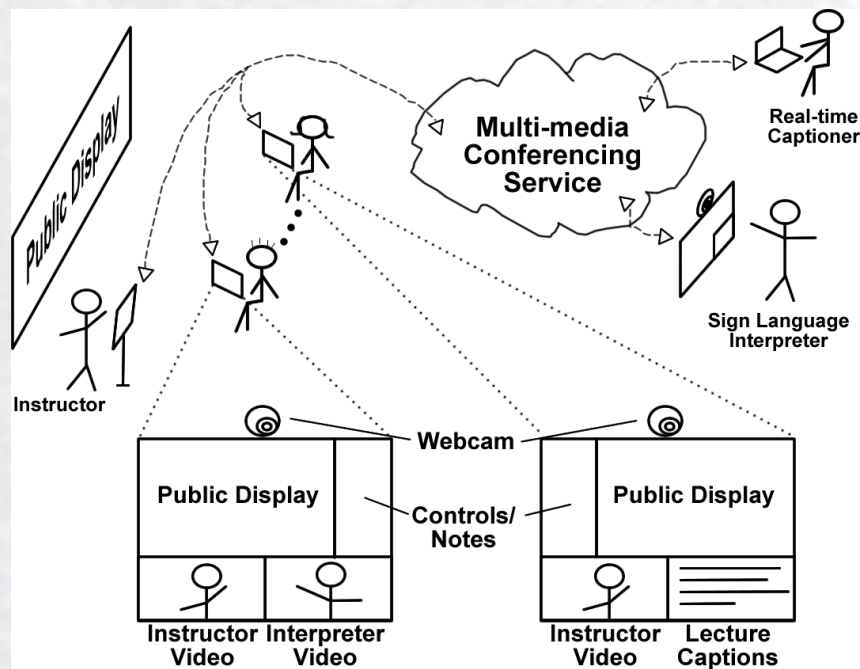
# NSF Cyber Community Grants

- Cyber Community
  - IIS-0915268
- Summit
  - OCI-0749253
- Enrichment
  - HRD-0927586
- Alliance
  - HRD-1127955

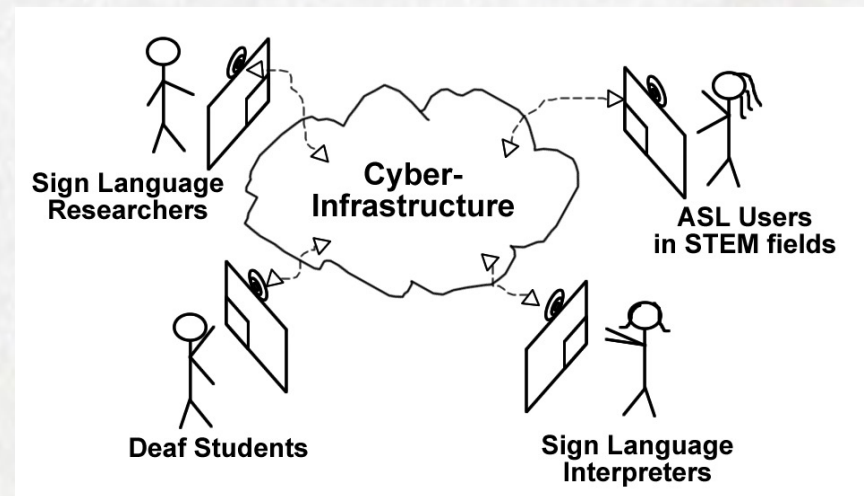
# DHH Cyber Community

<http://dhhcybercommunity.cs.washington.edu/>

## ClassInFocus



## ASL-STEM Forum



# DHH Cyber Community

<http://dhhcybercommunity.cs.washington.edu/>

## ClassInFocus

- Lead to an investigation in systems and technology to support remote services.

## ASL-STEM Forum

- Online video forum
  - <http://aslstem.cs.washington.edu/>



# DHH Cyber Community

<http://dhhcybercommunity.cs.washington.edu/>



## ASL-STEM Forum

Enabling American Sign Language to grow in Science, Technology, Engineering, and Mathematics (STEM)

E-mail:  Password:  [Sign in](#)

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**Natural Science**

**Definition:** Natural science refers to a rational approach to the study of the universe, which is understood as obeying rules or laws of natural origin.

*Source: Wikipedia.org*

**Example:** Natural science refers to a rational approach to the study of the universe, which is understood as obeying rules or laws of natural origin.

 [Highest Rated Sign](#)



Video id: [#303 \(enlarge\)](#)

Post date: 8/4/2010

Posted by: [vfanestil](#)

Rating:  3 ratings

[See all signs \(1\)](#)

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There are no comments for this topic.

# Summit

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

- “Summit to Create a Cyber-Community to Advance Deaf and Hard-of-Hearing Individuals in STEM (DHH Cyber-Community)”
- The goal of the Summit was to conduct a conference with 50 leaders in the field of support service provision for postsecondary deaf students in STEM programs
- The primary outcome was to report on the current state of online remote interpreting and captioning, and to identify the benefits and challenges associated with creating a multimedia application and network

# Enrichment

<http://www.rit.edu/ntid/cat/enrichment>

- “Enrichment : Testing the Concept of a Virtual Alliance for Deaf and Hard of Hearing STEM Students at the Postsecondary Level”
- The goal was investigate the creation of a virtual support network for deaf/hard-of-hearing college students around the country enrolled in science, technology, engineering, and mathematics (STEM) programs
- The primary outcome was a successful NSF Alliance Proposal!

# Alliance

[dhhvac.org](http://dhhvac.org)

- Model for Provision of Remote Tutoring and Mentoring
- NTID/RIT, Camden County College, and Cornell University are constructing an on-line community to support the learning needs of students who are deaf and hard-of-hearing in the areas of science, technology, engineering, and mathematics (STEM).

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**L Elliot** Yesterday 11:49 AM - Limited

Attention VAC students and faculty! Here's an amazing scholarship opportunity--but the deadline is Feb. 18, so hurry!!



[Google Lime Scholarship Program » Opportunities » Lime - boundless ability »](#)

Applications are currently open! Deadline to apply is midnight PST on Monday, February 18th! Access to knowledge is our thing. When it comes to higher education for promising scholars, we don't want a...

+1



➦ 1

Add a comment...



**W Kellard** Yesterday 4:39 PM (edited) - Community - The DHH Virtual Acad...

Here is my schedule for Spring Quarter. Are there any RIT folks in any of these classes in the Spring? Has anyone taken any of these classes in the past? It is going to be a busy quarter! Click on the picture to see it full screen.

| Time  | Monday<br>Mar 4  | Tuesday<br>Mar 5  | Wednesday<br>Mar 6   | Thursday<br>Mar 7   | Friday<br>Mar 8  | Saturday<br>Mar 9 | Sunday<br>Mar 10 |
|-------|--|---|--|---|--|-------------------|------------------|
| 08:00 |  |   |  |   |  |                   |                  |
| 09:00 |  |   |  |   |  |                   |                  |
| 10:00 |  | 0509 210 - 04<br>Intro. To Philosophy<br>Lecture<br>10:00 - 11:50<br>Liberal Arts Hall A305 |  | 0509 210 - 04<br>Intro. To Philosophy<br>Lecture<br>10:00 - 11:50<br>Liberal Arts Hall A305 |  |                   |                  |
| 11:00 |  |   |  |   |  |                   |                  |
| 12:00 | 0610 315 - 01<br>Principles Mech Design I<br>Lecture<br>12:00 - 12:50<br>Engineering Hall 1555 |   | 0610 315 - 01<br>Principles Mech Design I<br>Lecture<br>12:00 - 12:50<br>Engineering Hall 1555 |   | 0610 315 - 01<br>Principles Mech Design I<br>Lecture<br>12:00 - 12:50<br>Engineering Hall 1555 |                   |                  |



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# The DHH Virtual Academic Community (Private)

VAC

23 members

Private

Actions

On

All posts

STEM Discussion

3

Academics

1

Accessibility

1

Question & Answer

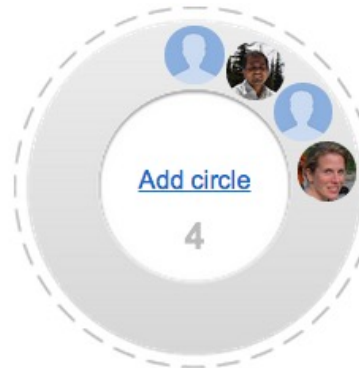


Share with this community



**VAC ADMN** Yesterday 7:17 PM - VAC Circles

New additions to the Mentor Team Circle! +S. Weiner-Collier added an excellent profile! Please take a moment to read about her, and stay tuned for events involving our Mentors in the future!



VAC ADMN shared a circle with you.

C Lautenschlegar, D Visariya, Caroline Solomon, and S. Weiner-Collier

[View shared circle](#)

+1

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(Private)  
VAC

23 members Private

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- User Guides
- VAC Circles
- Tutoring Discussion
- Mentoring Discussion
- Events



**VAC ADMN** Feb 6, 2013

This is our fourth video guide, which helps our new members to create new 'Circles' and use the Chat in Google+.

**VAC Guide #4: 'Circles' and Chat**  
www.DHHVAC.org The Virtual Academic Community is a prototype design...

+1

Add a comment..



**VAC ADMN** Feb 6, 2013

This is our third video guide, which helps our new members to join the VAC private 'Community.'

# Video Guides

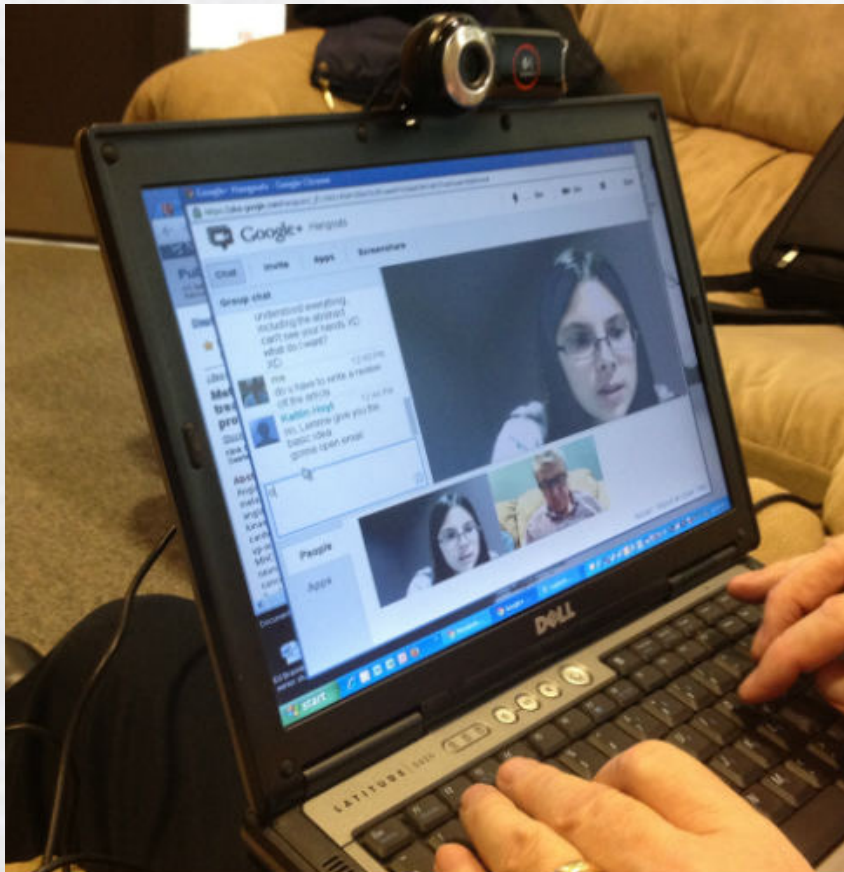
<http://www.youtube.com/channel/UC3jz2bVv7WkWJAxCOsOV30Q/videos>

The screenshot shows a YouTube channel page for 'VAC ADMN'. At the top left is a profile picture of a computer monitor and keyboard. To its right is the channel name 'VAC ADMN' and a 'Subscribe' button. Below this is a 'Browse videos' tab. Underneath are navigation tabs for 'Uploads', 'Feed', and 'Comments', along with a 'View' dropdown menu. The main content area displays five video thumbnails in a grid. Each thumbnail shows a woman speaking in front of a blue background, with a screenshot of a computer screen overlaid. Below each thumbnail is the video title, view count, and upload time.

| Video Title                         | Duration | Views    | Upload Time |
|-------------------------------------|----------|----------|-------------|
| VAC Guide #1: Setting up your em... | 5:44     | 12 views | 3 hours ago |
| VAC Guide #5: Profile and Privacy   | 8:06     | 16 views | 1 day ago   |
| VAC Guide #4: 'Circles' and Chat    | 6:02     | 54 views | 1 week ago  |
| VAC Guide #3: 'Communities'         | 5:42     | 54 views | 2 weeks ago |
| VAC Guide #2: Joining Google+       | 4:56     | 67 views | 3 weeks ago |



# Remote Tutoring



**Group chat**

Gehret VACutor joined group chat.  
Kaitlin Hoyt joined group chat.

**Kaitlin Hoyt**  
on sorry  
better?  
5:05 PM

Kaitlin Hoyt left group chat.  
Kaitlin Hoyt joined group chat.

**Kaitlin Hoyt**  
got it!  
5:11 PM

**Kaitlin Hoyt**  
k cat = 30  
5:17 PM

People  
Apps

# Cisco Research

- Three Strands
- Equipment Donation
- TelePresence



# Variables Within Interpreted TelePresence Scenarios

- Determine “best practices” when working with TP and interpreters
  - Face-to-face within the TP system
  - Remote with the TP system

# 9 Scenarios/4 Days/Summer 2012

- Variables:
  - Number of Deaf/Hearing participants
  - Level of interaction among all participants
  - Level of technology within the TP system
  - Different kinds of TP systems
  - Location of interpreters
  - When IN the environment and when REMOTE

## TelePresence Research Scenarios

|                   | Communication                              | Sites         | Technology at Site  | Interpreter at Site   | Participants at Site                                       |
|-------------------|--|---------------|---------------------|-----------------------|--|
| <b>Scenario 1</b> | Presentation with PPT<br>Primarily one-way | Cisco CTS1300 | 1-Screen/3-Cameras  | None                  | Hearing Instructor   |
|                   |  | Cisco CTS3210 | 3-Screens/3-Cameras | 2 Interpreters (Team) | 3 Deaf Students<br>3 Hearing Students                      |
| <b>Scenario 2</b> | Sharing with PPT<br>Interactive two-way    | Cisco CTS1300 | 1-Screen/3-Cameras  | 1 Interpreter         | Hearing Instructor<br>1 Deaf Student<br>2 Hearing Students |
|                   |  | Cisco CTS3210 | 3-Screens/3-Cameras | 1 Interpreter         | Hearing Instructor<br>4 Deaf Students<br>1 Hearing Student |
| <b>Scenario 3</b> | Classroom with PPT<br>Primarily one-way    | Cisco CTS1300 | 1-Screen/3-Cameras  | 2 Interpreters (Team) | Hearing Instructor   |
|                   |  | Cisco CTS3210 | 3-Screens/3-Cameras | None                  | 4 Deaf Students<br>1 Hearing Student                       |
| <b>Scenario 4</b> | Presentation with PPT<br>Primarily one-way | Cisco C20     | 1-Screen/1 Camera   | None                  | Hearing Instructor   |
|                   |  | Cisco CTS1300 | 1-Screen/3-Cameras  | 2 Interpreters (Team) | 5 Deaf Students<br>1 Hearing Student                       |

**TelePresence Research Scenarios**

|                   | <b>Communication</b>                       | <b>Sites</b>  | <b>Technology at Site</b> | <b>Interpreter at Site</b> | <b>Participants at Site</b>                                |
|-------------------|--|---------------|---------------------------|----------------------------|--|
| <b>Scenario 5</b> | Sharing without PPT<br>Interactive two-way | Cisco C20     | 1-Screen/1-Camera         | 1 Interpreter              | Hearing Instructor<br>3 Deaf Students                      |
|                   |  | Cisco CTS1300 | 1-Screen/3-Cameras        | 1 Interpreter              | Hearing Instructor<br>2 Deaf Students<br>1 Hearing Student |
| <b>Scenario 6</b> | Sharing with PPT<br>Interactive two-way    | Cisco C20     | 1-Screen/1-Camera         | 1 Interpreter              | Hearing Instructor<br>2 Deaf Students<br>1 Hearing Student |
|                   |  | Cisco CTS1300 | 1-Screen/3-Cameras        | 1 Interpreter              | Hearing Instructor<br>3 Deaf Students                      |

## TelePresence Research Scenarios

|                   | Communication                              | Sites         | Technology at Site                               | Interpreter at Site   | Participants at Site                 |
|-------------------|--|---------------|--|-----------------------|--------------------------------------|
| <b>Scenario 7</b> | Sharing without PPT<br>Interaction two-way | Cisco CTS1300 | 1-Screen/3-Cameras<br>Tablet for Interpreter     | 1 Interpreter         | Hearing Instructor                   |
|                   |  | Cisco CTS3200 | 3-Screens/3-Cameras<br>Tablet for Interpreter    | 1 Interpreter         | 4 Deaf Students<br>1 Hearing Student |
| <b>Scenario 8</b> | Presentation with PPT<br>Primarily one-way | Cisco C20     | 1-Screen/1-Camera                                | None                  | Hearing Instructor                   |
|                   |  | Polycom       | 1-Screen/1-Camera<br>4000 HDX<br>21 inch display | 2 Interpreters (Team) | None                                 |
|                   |  | Cisco CTS1300 | 1-Screen/3-Cameras                               | None                  | 2 Deaf Students                      |
| <b>Scenario 9</b> | Sharing with PPT<br>Interactive two-way    | Cisco C20     | 1-Screen/1-Camera                                | None                  | Hearing Instructor<br>1 Deaf Student |
|                   |  | Polycom       | 1-Screen/1-Camera<br>9000 HDX<br>32 inch display | 2 Interpreters (Team) | None                                 |
|                   |  | Cisco CTS1300 | 1-Screen/3-Cameras                               | None                  | Hearing Instructor<br>1 Deaf Student |

# Our Goals for Participants

- Interpreters:
  - To have the same interpreters across scenarios
  - Nationally certified
  - Flexible
- Deaf participants:
  - To have the same “students” across scenarios
  - Experience with interpreters
  - Willing to give feedback
- Hearing participants:
  - To have the same “presenters” across scenarios
  - Some knowledge/experience working with interpreters

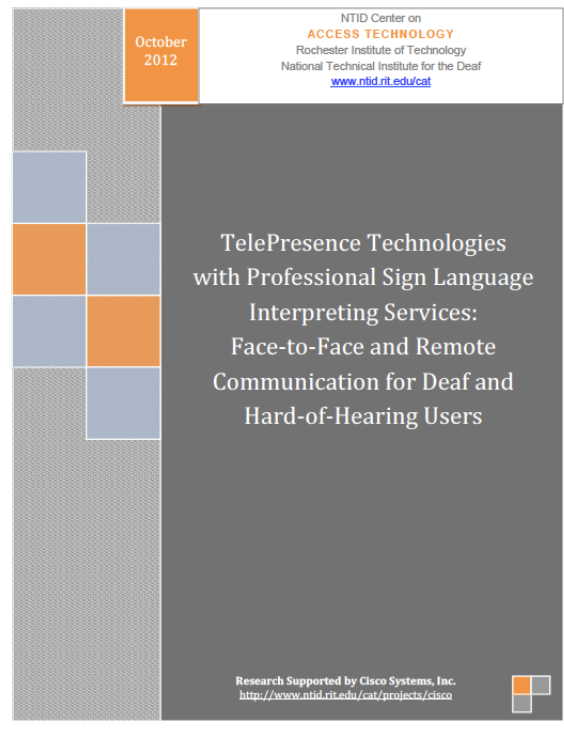


# What We Did

- Assigned everyone a “role”
- Ran the scenario, with 2 working interpreters and a third one observing/advising
- Distributed written feedback forms to all
- Conducted approx. 15 minute de-briefings with all participants
- Two interpreters now participated and third did the interpreting
- Made minor adjustments from feedback, took a short break, moved on to next scenario

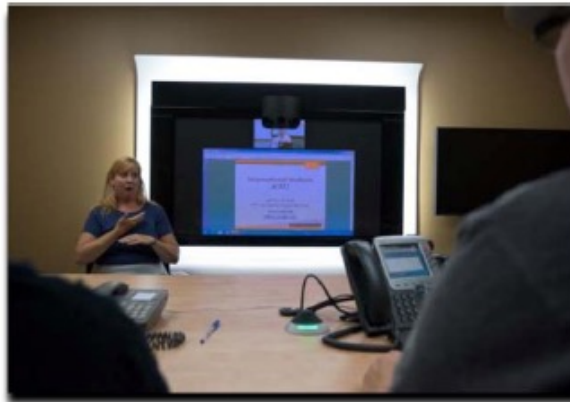
# Report

- [http://www.rit.edu/ntid/cat/sites/default/files/NTID-TelePresence\\_Oct2012\\_Final.pdf](http://www.rit.edu/ntid/cat/sites/default/files/NTID-TelePresence_Oct2012_Final.pdf)



# Report of Each Scenario

Research Scenario 2 included interactive two-way communication between two groups of people at two sites. The first site, 1-screen/3-camera site (Cisco CTS1300) included one hearing instructor, one interpreter, one deaf student, and two hearing students. The hearing instructor at the first site shared information utilizing PPT media. The second site, 3-screens/3-cameras (Cisco CTS3210), consisted of one hearing instructor, one interpreter, four deaf students, and one hearing student.



*Site 1: 1-screen/3-camera site (Cisco CTS1300) included one hearing instructor, one interpreter, one deaf student, and two hearing students sharing information utilizing PPT media.*

*Photo 3*



*Site 2: 3-screen/3-camera site (Cisco CTS3210), consisted of one hearing instructor, one interpreter, four deaf students, and one hearing student.*

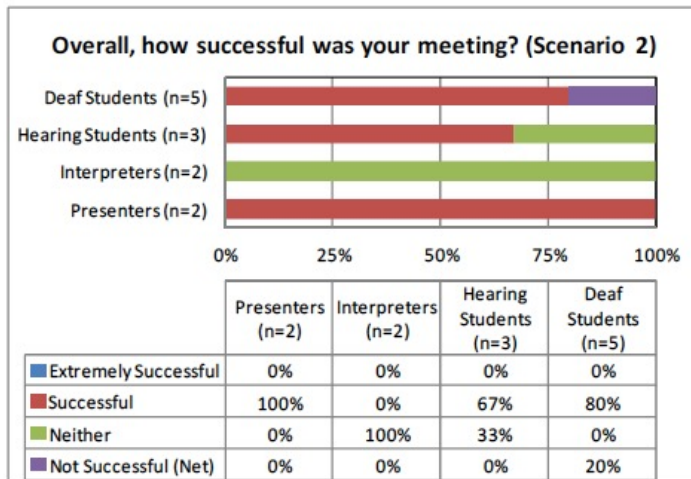
*Photo 4*

# Report on Each Scenario

## SCENARIO 2 FINDINGS

Overall, two-thirds (67%) of the participants rated scenario 2 successful. Six out of eight (75%) deaf and hearing students agreed that the meeting was a success (80% and 67%, respectively). Again, presenters and students were most impressed by the size and quality of the visuals, but identified significant problems related to the camera being voice activated and positioned on the voicing interpreter as opposed to the deaf person asking the question.

Similar to Scenario 1, the interpreters did not rate this scenario successful. The interpreters mentioned that they did not always know who they were interpreting for, and that being able to see the other team interpreter is vital to the interpreting process. In addition, several of the students (38%)



*The camera changes view by a sound sensor, and because not everyone voices, you don't always see who is actually talking. For example, when the deaf man introduced himself, I would have liked to put a face with the name, but the camera stayed on the interpreter.*

~ Hearing Student

# Results - Primary Themes

- Cameras are voice-activated
  - Problems for Deaf participants
  - Problems for interpreters
- Actual positioning of interpreters
  - In the room, near the screen
  - In the other room, near the presenter
    - Interpreters cannot communicate with Deaf participants
  - Remote
    - Problems with lack of eye contact, re-adjusting tiles on the screen
- Quality – wow!!
- Future – lots of possibilities!!

# Discussion

- Questions
- Comments
- Resources