Mathematics Video Conference: NTID and CSB

Vincent A. Daniele
Joan A. Carr
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1st Videoconference: Key Points

- Mathematics curriculum at NTID
- Math instruction at NTID: content and philosophy
- Target Values at CSB
- Examples from NTID’s Business Math course
- Relevance to the CSB Business Math course
- Use of calculators at NTID

2nd Videoconference: Key Points

- Research findings
- Importance of communication - vocabulary, language and problem solving
- Math anxiety and motivation
- Use of spiral approach
- Use of mathematical sketches/visuals for comprehension and retention of concepts
- Use of tutoring
- Multiple forms of assessment
### 3rd Videoconference: Overview

**Mathematics Placement**

- Use of selected questions to target the ‘heart’ of a course
- Use results to place in a course where student can be successful and challenged
- Percents used for placement may seem low or arbitrary
- Student interviews can help in placement, as can academic record
- “But I already had this material.”

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### Mathematics Placement

**CSB and NTID Mathematics Placement**

- **CSB Placement Process?**
- **NTID Placement Process**
  - Questions from levels A through C
  - Each question may relate to more than one course
  - Testing, transcripts, interviews
  - Some examples
Characteristics of our Best Math Classes

• Communication accessible to all
  – ASL
  – English
• Open exchange of questions and answers
• Mutual respect
• Clear course expectations
• Clear course materials
• Challenging but not overwhelming content

Characteristics of our Best Math Classes

• Sufficient wait time
  – Questions/Answers
  – Switching between technologies/visuals
• Appropriate visuals
• Examples (general to specific, specific to general)
• Use of technology for doing math
  – Calculators, computers
  – Emphasizing connections

Effective use of Technology and Visual Materials

• Use of technology and visuals not sufficient to guarantee access to deaf students
• A story about use of technology with deaf professionals
Effective use of Technology and Visual Materials

• Wait time and eye gaze
• Taking notes
• Visibility of writing surfaces
• Acoustical distractions minimized
• Visual distractions minimized
• Furniture arranged for visibility

Issues: Teaching and Learning Mathematics

• Mathematics is not generally an area of strength for our entering deaf students
  – As a group, deaf students have not performed as well as their hearing peers
• Many students prefer the computational aspects of mathematics
• Problem solving and conceptual understanding is more difficult

Issues (continued)

• Student’s educational backgrounds are varied:
  – Former teachers may not be trained mathematicians
  – Former teachers may not be able to communicate well
  – Emphasis often given to computation and manipulation
  – Academic advising and encouragement is often missing
Issues (continued)

• Math instruction may be given lower priority than English
• Spoken and written language can be barriers to mathematics learning
• Student sketches don’t always capture the essence of a problem

Issues (continued)

• Incidental learning and interaction with others may be lacking
• Students may lack persistence and resilience, especially related to problem solving

Optimism

• Despite these issues, we remain optimistic; deaf students can learn mathematics
• We see tremendous growth in our students over time
• Rarely is mathematics the sole barrier to graduation
• Teacher attitude is critical