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SYNCHRONOUS ONLINE TUTORING FOR DEAF AND HARD-OF-HEARING STUDENTS: AN ANALYSIS OF OBSERVED FUNCTIONS

Acknowledgements

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- DHHVAC Students & Tutors

- Student Research Assistants: James Brunner, Amy Johnson, Jonathan MacDonald, Carson Pursifull, Kaycee Sommers, Annette Tavernese, & Darius Toney
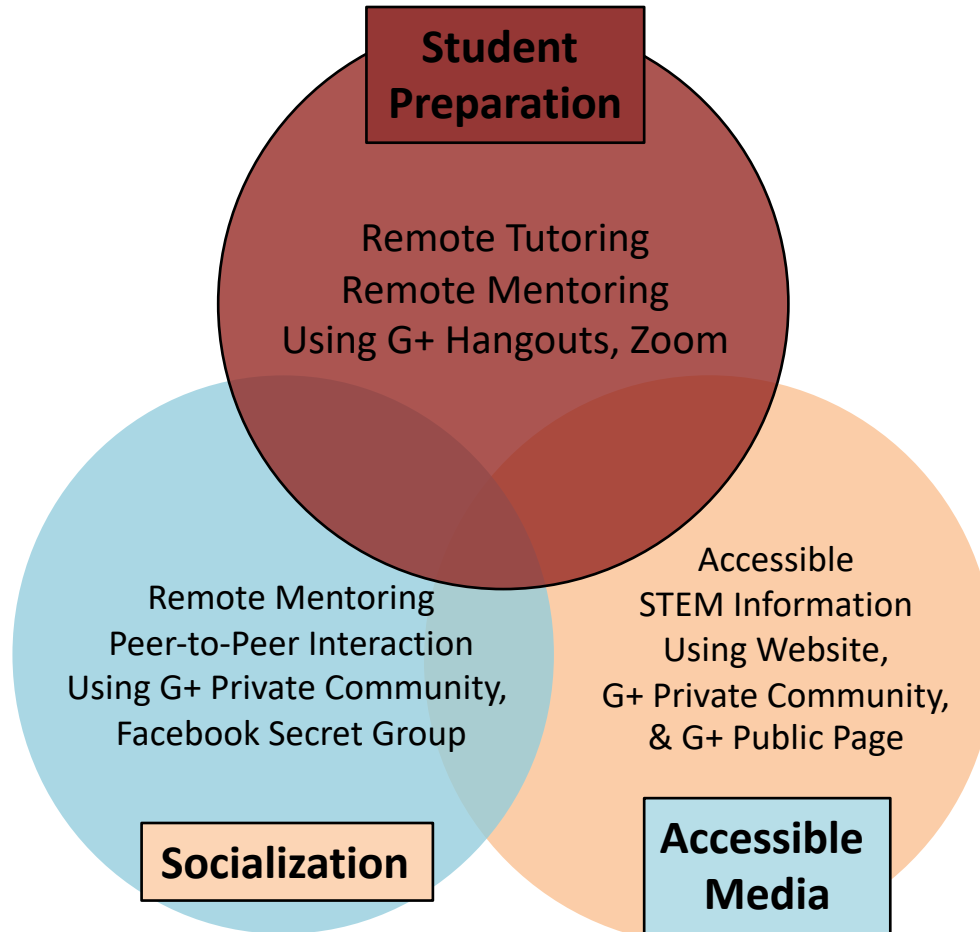
Objectives

- Rationale for DHHVAC Synchronous Tutoring
- Other Synchronous Tutoring for DHH students
- Finkelstein's model of synchronous tutoring
- Discuss findings from analysis of tutoring videos

- Q & A

DHHVAC Model
Barriers & Strategies

Student Preparation

Remote Tutoring
Remote Mentoring
Using G+ Hangouts, Zoom

Remote Mentoring
Peer-to-Peer Interaction
Using G+ Private Community,
Facebook Secret Group

Accessible
STEM Information
Using Website,
G+ Private Community,
& G+ Public Page

Socialization

Accessible Media

Online Tutoring Defined

- Synchronous or real-time
  - Still face-to-face (like traditional office hours or tutoring), but mediated by the computer

- Asynchronous (delayed time)
  - Email or other exchanges that do not occur at the same time
  - Supplemental videos

Other Online Tutoring Projects for D/HH Students

- Brown (2010)
  - High school students
  - Science classes
- Bryant (2011)
  - NTID
  - Writing course
- NRSC (2017-18)
  - High school students @ AIDB
  - Math classes

Faculty and Student Responses to Online Learning

- Faculty
  - Concerns about rapport and communication
  - Concerns about technology issues and support
- Students
  - Increased convenience
  - Ability to save notes for later use

DHHVAC Tutoring Experience

- At least 170 synchronous tutoring sessions between February 2012-present:
  - 16 different tutors
  - 42 different students (73% RIT, 27% Camden/Cornell)
  - 10 different STEM course domains:
    - Anatomy & Physiology, Biology, Calculus, Chemistry, Elementary Math, Geometry, Physics, Pre-Calculus, Psychology, Math Research

Methods

- Sample: 585 segments from 17 videos
- Courses:
  - Biochemistry (344 segments)
  - Math (12)
  - Physics (92)
- 3 tutors
- 4 students

Analysis

- Conversation Analysis (Sidnell, 2012)
  - Timestamp segments (between 1-50 seconds)
- Ratings by team of 2-6 coders
  - Tutoring experience
  - Student experience as a tutee
  - All ASL fluent
- Interrater reliability using Fleiss' Kappa (Landis & Koch, 1977):
 - K= .61-.73, p=0.000 (substantial agreement)

Analysis

- Learner-initiated and Tutor-initiated
- 24 codes (based on Bryant, 2011)
  - Communication Strategies (e.g, ASL, SimComm, facial expressions)
  - Interactions (e.g., asking questions, responding to questions, expressing understanding)
  - Materials (e.g., online resources, hardcopy materials, physical or virtual tools, text chat)
  - Technology
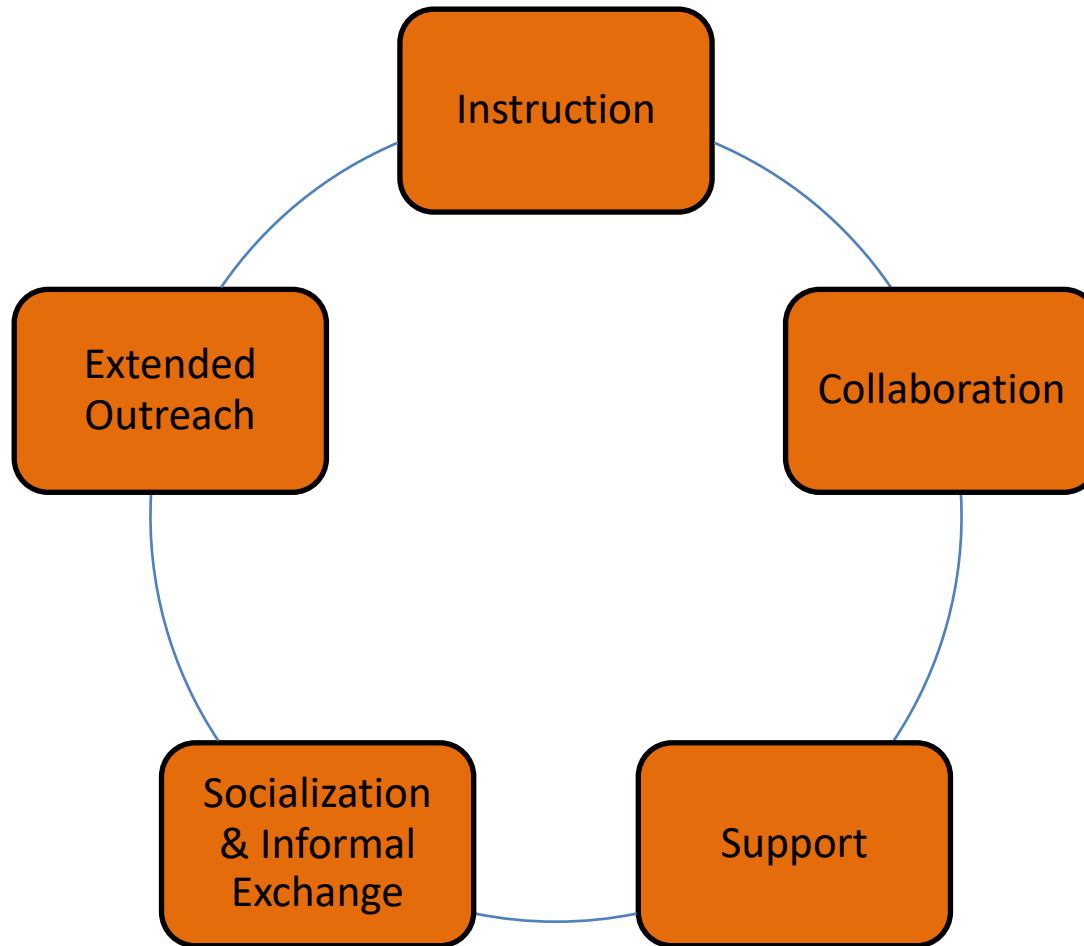   - Conversations about platform features
    - Problems with technology

Coding Outcomes
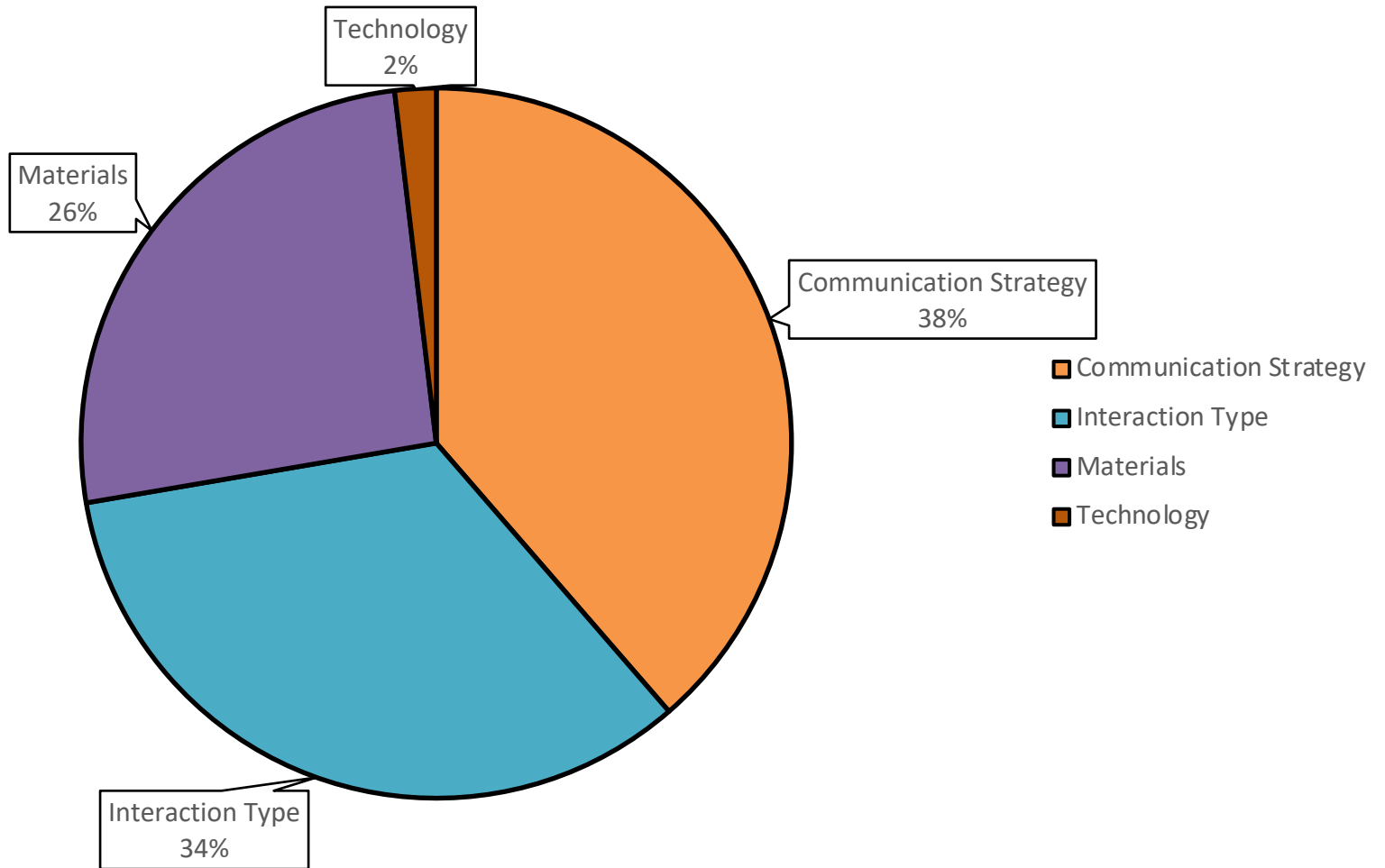
The "Finkelstein Five"
Synchronous Online Learning Functions
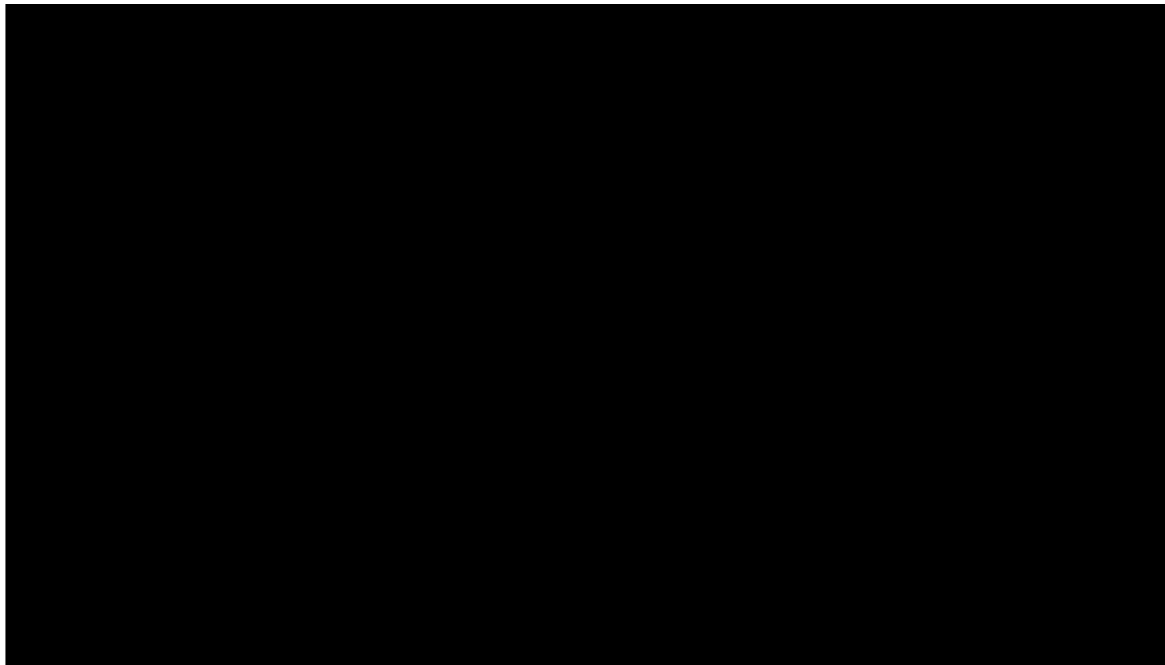
Finklestein Five-Instruction

- Instruction=Active construction of knowledge by learners through process of real-time give-and-take

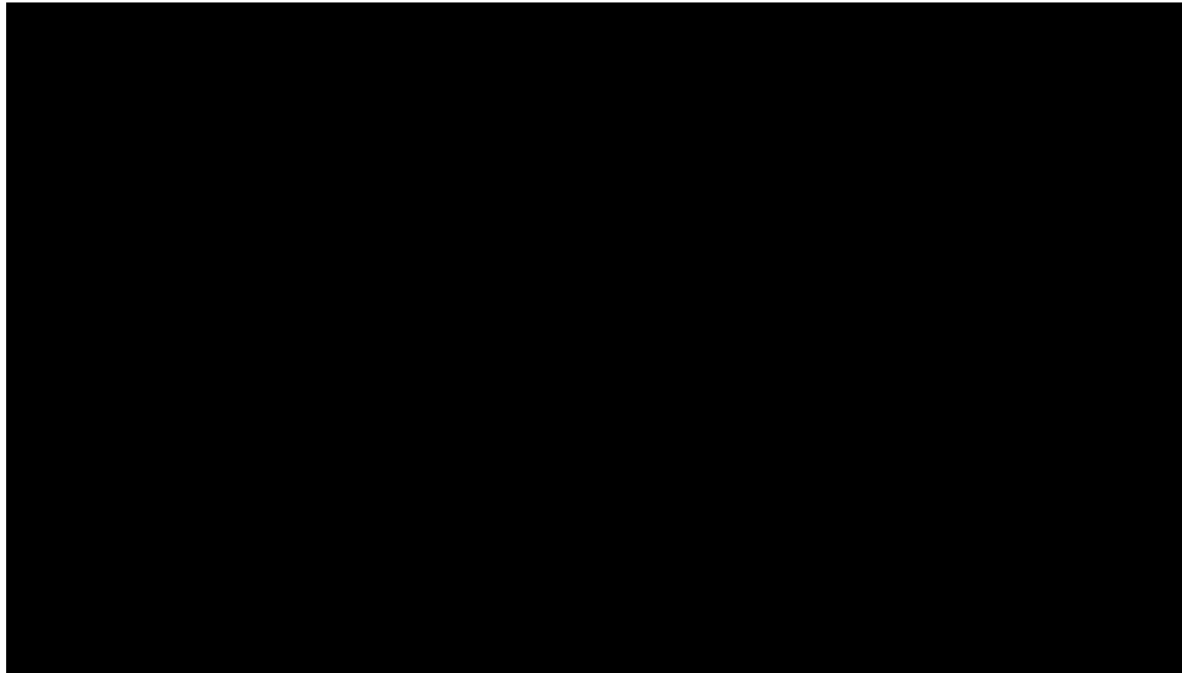# Finkelstein Five-Collaboration

- Collaboration=A key element to the success of an online learning environment. Interactions tend to be more egalitarian in nature...

Finkelstein Five-Support

- Support=A crucial element for retaining and motivating learners...personalized, live exchange with the right person...
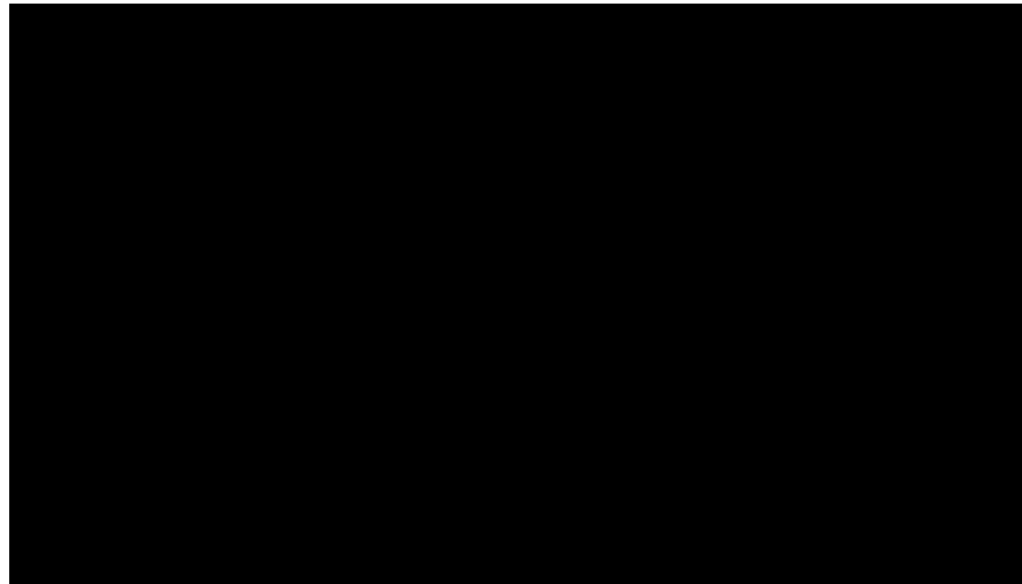
Finkelstein Five-Socialization & Informal Exchange

- Socialization & informal exchange=Help to build community and create a friendly and safe environment in which people can feel like people.
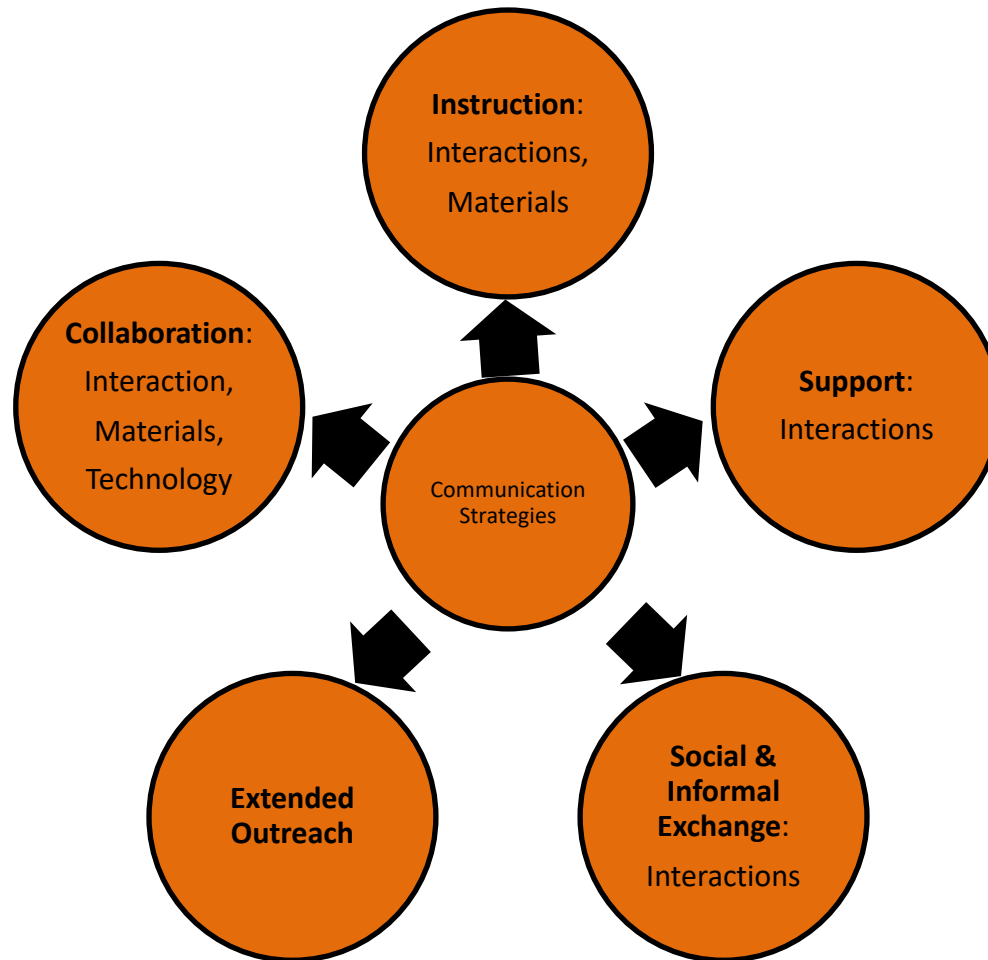
Finkelstein Five- Extended Outreach

Extended outreach=Institution's connection to the world beyond it's gates.

27% of students who received tutoring were from partner schools

Revised Model

Discussion

- Evolving project!
  - Continue refining coding scheme
  - Adding more videos
- Emphasis is on instruction and support
- With appropriate training, minimal technology problems

Concluding Thoughts

"[A common misconception about] Synchronous interaction is that [it is] too difficult to learn and is hard to facilitate—Nothing is too difficult to learn, especially for people who make their careers out of educating others. The best way to learn how to *teach* with a synchronous tool is to *learn* with one."

(Finkelstein, 2006, pp.138-139).