

# Online Tutoring for Deaf and Hard of Hearing Students: Creating Resources Across Time & Space

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## Background

Online support for academic subjects is widely available for the general postsecondary student population. However, many of these resources are not accessible for students who are deaf or hard of hearing (DHH) because generic online resources do not match DHH students' communication preferences or address other academic needs.

## Abstract

This poster describes *synchronous* and *asynchronous* online tutoring resources for courses in science, technology, engineering, and math (STEM). The resources are sponsored by the Deaf STEM Community Alliance, funded by the National Science Foundation, and offered to DHH student participants at RIT, Camden County College, and Cornell University online tutoring since 2012. Included in the poster are preliminary results of a qualitative analysis of video content from a subsample of the synchronous tutoring sessions. This study is being conducted to understand what transpires during synchronous tutoring sessions with regard to communication strategies, conversation content, materials used, and technology issues. While literature on online learning suggests that faculty members are reluctant to get involved often due to concerns about technology issues, our research suggests that technical difficulties have only occurred occasionally, and the majority of interactions focus on course content.

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## Synchronous Tutoring

Students and their tutors have engaged in 160 sessions of 15 minutes-3 hours in length (average 63 minutes). Tutoring sessions have been conducted using the free Google Hangouts web conferencing platform.

Twenty percent (n=32) of the tutoring sessions have video documentation which is being analyzed by the research team. At the time of this presentation, 8 videos have been coded. Course topics include Biochemistry, Mathematics, and Physics. Results are shown in Table 1.

**Table 1. Synchronous Tutoring Video Content**

Content Trend	Student	Tutor
<b>Communication Style</b>	Simultaneous Communication	Sign Language; Facial Expression
<b>Conversation Content</b>	Providing Information or Expressing Understanding	Providing Information or Expressing Understanding
<b>Materials Used</b>	Hardcopy homework; Text-based chat	Hardcopy homework

Would you like to see tutoring sessions in action?  
Scan the QR code below with your smartphone!




## Asynchronous Tutoring Resources

Another method for providing online resources to students is through a video archive for those times when synchronous tutoring is not available.

One of our tutors created a library of videos for students as a resource to prepare for exams. The videos are stored on the Deaf STEM Community Alliance YouTube channel: <https://www.youtube.com/user/dhhvac>

In late Fall of 2016, 131 videos were made available to students in introductory mathematics courses. The library expanded to 166 videos for the 2017 Spring semester.

- **Shortest video:** 0:27; **Longest video:** 9:14
- **Average length:** (Fall); 2:42 (Spring) 2:29
- **Total number of views:** (Fall) 1,930; (Spring, to date) 855
- **Total watchtime minutes:** (Fall) 2463; (Spring, to date) 1075
- **Average watchtime minutes:** (Fall) 12:06; (Spring, to date) 11:02

