Increasing Undergraduate Student Interpreters' Fluency and Accuracy in Interpreting STEM Content

Audience

Student interpreters enrolled in Lamar University's interpreter training program (ITP).

Need

Supporting the education of students who are deaf or hard of hearing requires increasing the pool of interpreters who can convey STEM content.

Project Design

- Prepare a Signing Bioscience Dictionary (SBD).
- Create summaries of core biology content.
- Produce videos of fingerspelling.
- Conduct an evaluation.
- Disseminate products and findings.

Guiding Questions

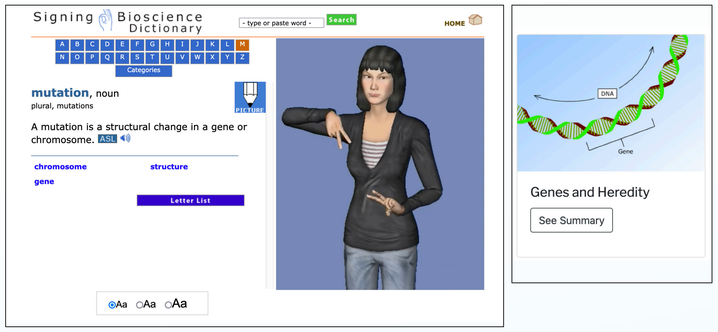
1. How do Lamar ITP students use the SBD, content summaries, and videos?
2. How effective are the materials in increasing students' capacity to interpret the SBD terms clearly and accurately?
3. What additions and/or changes would make the materials more effective?

Year 1

Led by PI Judy Vesel, the TERC team prepared the SBD and Life Science Content Summaries.

Year 2/3

After preparing final versions of the videos, the Lamar team conducted an evaluation.



Year 4

Activities focused on dissemination.

Evaluation

Phase I examined students' study and mastery of SBD Genes & Heredity vocabulary and related content.

Phase II focused on the use of syllabication or coarticulation in signed fingerspelling.

Results (N=24)

RQ 1. Students used the SBD to look up terms and definitions in ASL and English; see words signed; view illustrations; learn new signs; and learn more about science. They read the content summaries and found them interesting.

RQ 2. Students' knowledge of STEM vocabulary was increased as evidenced by ability to sign the terms after SBD use (t (23) =8.139, p, .001; mean pretest=8.229 and mean post- test=36.562). Use of SBD definitions and content summaries did not result in improvement in content knowledge (t (23) =.532, p= .300; mean pretest=8.883 and mean post- test=8.771).

RQ 3. Students' ability to interpret biology lecture material was improved (t (23)=3.825, p,.001; mean pretest 2.415 and mean posttest=12.500). Videos of the fingerspelling principles and their application resulted in significant improvement of scores (t (23)=1.814, p=.041; mean pretest=9.833 and mean posttest=11.645).

RQ 4. Students were satisfied with the videos and the information about the SBD terms and welcomed the opportunity to improve their fingerspelling. Many would prefer a human signer.

Key Findings

Use of the SBD and summaries of bioscience content result in an increased ASL bioscience vocabulary and ability to sign bioscience terms. The definitions and bioscience content do not contribute to having an increased knowledge of the content presented in a biology lecture. Videos of the principles of fingerspelling and their application to the fingerspelling of terms contribute to students' ability to accurately and fluently fingerspell bioscience terms and increased their ability to interpret bioscience lecture material accurately and fluently.

Broader Impacts

The resources enable students to develop an ASL STEM vocabulary and to understand fingerspelling space and the principles where letters are blended through this space in a fluent motion. This will increase readability of scientific terms that are fingerspelled and enable interpreters to interpret STEM content more effectively for all deaf or hard of hearing students.

Partners

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College of Fine Arts & Communication
LAMAR UNIVERSITY
Department of Deaf Studies & Deaf Education

Project Web Site

https://signsci.terc.edu/video/SBD/interpreters/

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