International Math Sign Language (IMSL): Standardizing a "Universal Language" for the Deaf Community

Mendenhall, Aurora (School: Niceville High School)

For the Deaf community, math is not a universal language. In over 300 existing sign languages worldwide, most math terms do not have corresponding signs, forcing deaf students to fingerspell everything. For example, if they wanted to say the word ‘isosceles triangle,’ they would have to spell it out repeatedly. This slows down math communication and education, making it challenging for deaf students to succeed in math-related fields; the National Deaf Center on Postsecondary Outcomes found that only 7.8% of deaf students pursue math-related degrees. Developing a global set of math signs, along with an accessible online search engine, will aid deaf students in their education, careers, and lives. My research helped to achieve this goal. My experiment tested if math, sign language, and code could work together to improve math communication. I studied 6,000 signs from 23 global sign languages to accurately develop my solution. I created International Math Sign Language (IMSL), which contains 250 standard math signs. I also developed an easily accessible online search engine to display it. My experimental procedures proved effective during testing and my hypothesis was supported. My novel IMSL and interactive online database provided the most innovative system for improving math communication for the Deaf community. Alterations that would benefit the experiment include a larger pool of sign languages to study and signs developed for more math terms. These would increase the project’s viability and applicability. Future research on my topic includes creating international sign languages for every STEM subject. In summary, when math, sign language, and computer programming were used in tandem, they created a system that can change lives, and as a result, change the world.

Awards Won:
Third Award of $1,000