Dual Sensory

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Helen Keller was a remarkable woman who achieved success and fame despite losing her sight and hearing. The deafblind range is 0.2% to 2%, which represents 467 million of the global population. The Dual Sensory is a communication device for acquired deafblind people—they represent 80% of the cases—due to their reliance on previous knowledge that makes it easier to teach the application of combining languages. The prototype consists of two parts: hardware, a vest with 16 vibration motors, and software, a mobile application. The language used is a combination of two common languages: haptic and tactile. The prototype mechanism allows the deafblind to draw symbols on the application using a cover with opening circles on the pattern matrices; symbols are converted into sounds that non-deafblind people can understand. Conversely, if a non-deafblind person wants to respond, they can input text, which translates into vibration representing the symbols. Additionally, ten non-deafblind people tested the prototype, all of them agreed that there was a short distance between vibration motors. After modifying the prototype, the same people tested it, revealing a new problem, which is an inability to determine the starting and ending points of the symbols. To address this issue, a delay was made for each motor, and an isolating material was added to prevent the transition of vibrations. Furthermore, a 45-year-old female patient with acquired deaf-blindness tested the prototype. Ultimately, this innovative system enhances communication beyond sight and sound, greatly improving accessibility for the deafblind community.

Awards Won: