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Portable Assistive Communication Device

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Belt bag assistive communication device

Optional, portable and discreet functionality

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Introduction

- Augmentative and Alternative Communication (AAC) devices assist individuals with speech difficulties.- Hard of hearing or English as a second language individuals may benefit from an AAC device.

- Two to three children out of every thousand born in the U.S. are deaf or hearing impaired, and 15% of adults are diagnosed with hearing impairments (1).

- 10% of K-12 student enrollment in public elementary and secondary schools was presented by English learners (ELs) fall of 2020 (2).

- There is a prevalent amount of ELs experiencing selective mutism in the United States requiring assistance as SM prevalence in the general child population was 7.1 per 1,000 in the United States in 2002(3).

1.“Quick Statistics About Hearing.” *NIDCD*, https://www.nidcd.nih.gov/health/statistics/quick-statistics-hearing.

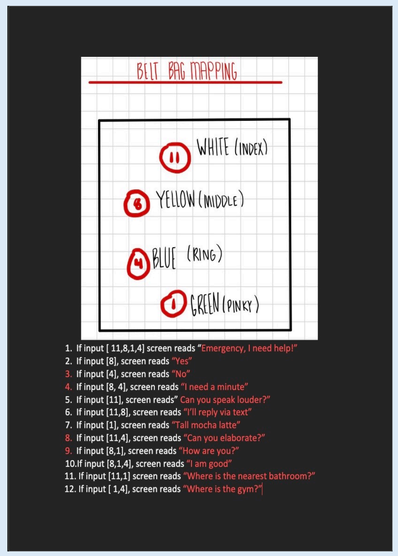
2.https://www.migrationpolicy.org/programs/data-hub/charts/english-learners-k-12-education-state#:~:text=In%20the%20fall%20of%202020,total%20K-12%20student%20enrollment.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538870/

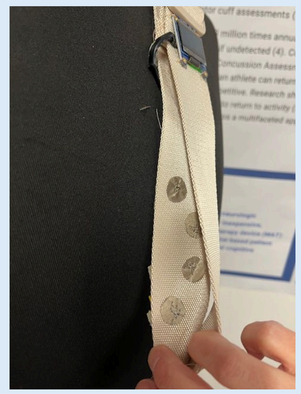
Objective

To develop a portable, customizable, and wearable AAC device in the form of a belt bag; suitable for those with various hearing and speech challenges.

Screen displays phrases without sound

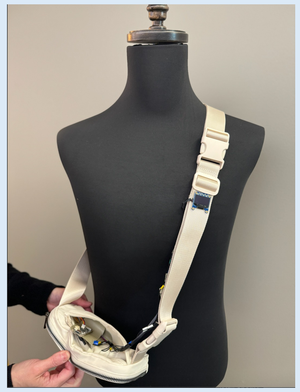


Mapping for device: each fabric button is color coated, pressing different combinations of buttons elicits associated phrases



Discreet, touch sensitive fabric triggers phrases

Device easily removed to convert bag into an everyday use belt bag



Lighweight programming chip comfortably lays in pocket, and can be removed for regular bag use

Features

-Customization of discrete buttons on the straps gives users preferred phrases for various situations where they face difficulty communicating.

- Buttons are in the form of touch sensitive fabric suitable for those with tactile sensitivities

-Device operates without noise, enhancing user enjoyment for hearing impaired users.

- Option for multiple profiles, user may have different phrases or words for various settings

- Discreet buttons lay behind strap, and screen lays on buckle for the most discreet display possible

Conclusion

Portable and discreet belt bag provides a comfortable and enjoyable use of AAC device for individuals with assistance communicating

Device is compatible with different disorders and impairments as it can be programmed to users preferred phrases, and is compatible with tactile and auditory sensitivities