Development of a Device to Improve Dysphasia in 3- to 6-Year-Old Children

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Dysphasia is a communication disorder that interferes with the development of language skills in children who do not have an intellectual disability. This problem must be dealt with quickly, seeing as doing otherwise could have negative repercussions until an individual’s adulthood. However, in situations such as Hurricane María (2017) in Puerto Rico or the current COVID-19 pandemic, the different therapeutic treatments for this condition are limited. Because of this the creation of a device using Arduino programming that works as a game for children aged 3 and 6, with dysphasia is presented. The device called "Dis-cube" is a board built using wood, a microphone and LEDs. The board contains nine cubes with built in speakers that work in conjunction with the Arduino program to stimulate and treat the child. One of the ways it can be used is to allow the infant to take a cube and "play" the recording that comes from the cube, then repeating the word into the microphone, after that the LEDs already programmed on the board will let one know if the word was pronounced correctly or not. In this way, this new tool serves as great innovation, seeing as it is accessible for both tutors and professionals to incorporate into their sessions. This being in turn available for multiple areas, having the opportunity to contribute to the improvement of other conditions or problems in fields like psychology or education.

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