



Vocal Vest Project

Patent pending

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Our Team



Dylan Machi

Co-head designer of
the Vocal Vest



Gabe Kirsch

Other co-head
designer of the Vocal
Vest




01

Planning

Problem Statement

Students with disabilities have trouble vocalizing their needs in day to day life and school.

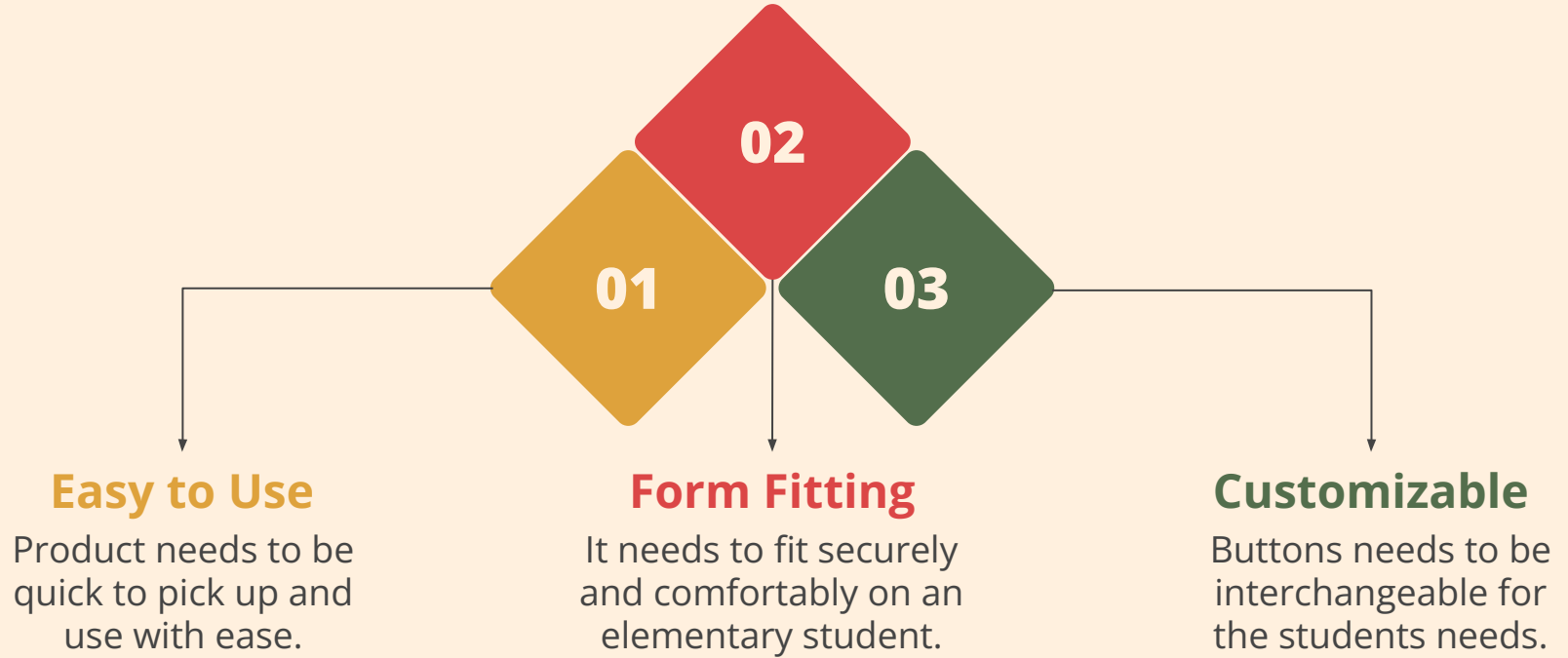




We will create a wearable vest for elementary school students with pushable buttons that will say preset statements.

Design Statement

Design Goals

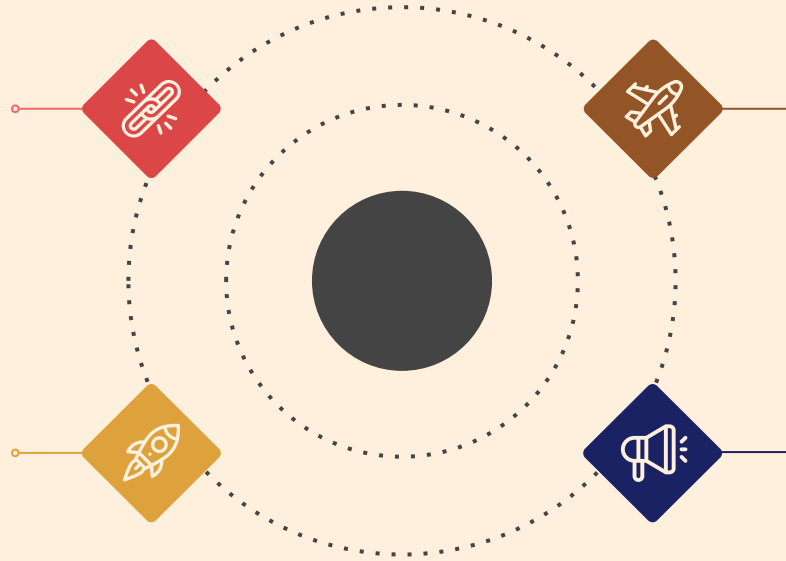


Product Research

The Big Mac



Vest Buddy

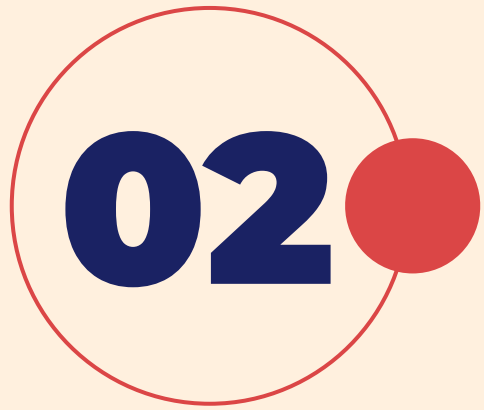


Speech Tablets



Speaker Hats



A red circle graphic containing the number 02 and a red dot to its right.

02

Creating

Initial Ideas For Prototype

Principal Idea

How would it work?

We researched different possibilities for speakers and recording devices, but chose to buy the buttons for easy replaceability if something broke and simplicity of the design.



Accessibility

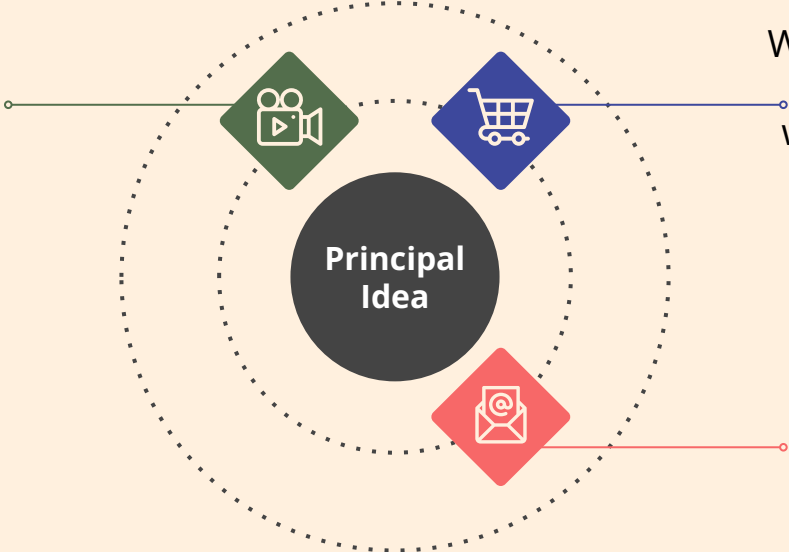
We used parts that were on hand to us and accessible to be able to create the best product with what we had. We wanted an easy design so that the teachers would be able to use it themselves.



Product Options

Buttons

There were many different options, but we were able to research and find an affordable product. We needed something big enough so students who have problems with fine motor skills would be able to use it.



Vest

We went to many stores to look for a kids vest with large pockets such as Walmart, Goodwill, and fishing stores.



Acquiring Materials



Buttons

Most of the brains of the project, records and says the recording when played.



Vest

We received this from Mr. Duhaime, holds everything.



Label Maker

Add labels to the vest to showcase what it says.

Vocal Vest Parts





**Sewing pockets into
the vest for buttons.**

Recording the Buttons

We recorded phrases and tested what it would sound like to get the most useful tools for the students.



They are always re-recordable for the students needs however they have been pre-recorded.

03

Testing



Ira B Jones Elementary School Visit

We went to the school in person to test our prototype and receive feedback from the students who would be using it.

Feedback We Received



Easier to Understand

Make the vest easier to modify for any kids needs



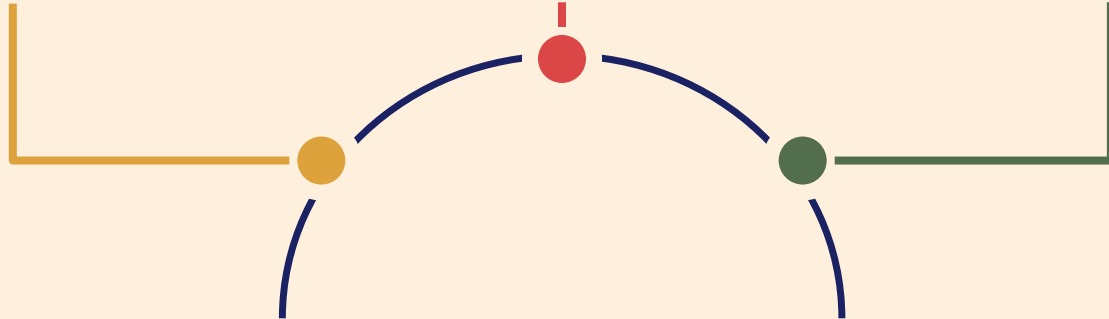
Better Vest

More comfortable with room to fit more buttons.



Labels

Create a way to label the buttons



Improvements



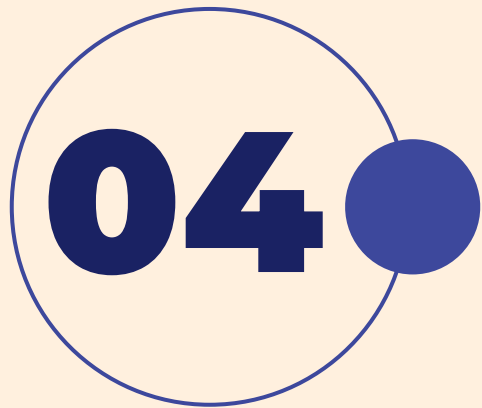
Labels

We labeled each spot with a button with the label maker to make it easy for the kid to understand.



New Vest

We ordered a new vest that should be able to hold more buttons at the same time.



04

Reflection



Dylan's Reflection

Project Overview

Now that it is complete my initial thoughts about the project are positive. I think that it was an interesting project with real world implications and real life skills that can be used in day to day life even if I do not become an engineer. Some challenges that I had in the project was at first we wanted to add buttons and use a raspberry pie to manually code the project by hand, however we needed to shift gears pretty quickly because of time limitations and it would take a long time to learn how to use that hardware effectively. It would also be hard to get a vest to be streamline if we had a makey makey, with wires going to all the components.

New Vest

If I were to do this again I would like to keep myself more organised and have a plan from the very beginning. It was more difficult to find materials than I was initially thinking, especially a vest that would work well so that took up a lot more of out time than I would have liked it. We could have used our time more efficiently as well. Regarding the vest, I think if I were to do create an additional prototype after this project it would have smaller or maybe a different kind of button that were not as bulky. Maybe having the same diameter so that it is still easy for kids with fine motor skills to be able to still hit it but not as thick so it is awkward to wear. Something like the hat idea would be a fun possible variation as well.

Gabe's Reflection

Project Overview

With the project over I can say that I enjoyed it. With projects like this it always makes you feel good. I think that through this project I learned important real world skills about engineering. Things like staying the course is important and that when stuck on a problem it is helpful to have another person there to bounce ideas off of who can see the problems with your ideas better than you can, this will inevitably make a better product. That being said I almost enjoyed giving feedback to other groups more than doing our thing. Looking back I think that I had better ideas for other people than for myself. I also learned that for a prototype not to set your sights too high. Originally we were going to try to make it with buttons hooked up to a raspberry pie but had to change the idea because that was too much to try to do for the prototype.

New Vest

If I were to do this project again I would try to make a plan at the start that is achievable, and do my best to stick to the plan. I would also not stick with a product that is not great just because we had it. I would also spend more time researching what things the buttons should say and the best supplies for the vest. This includes the final buttons that we got because the whole project would have been a lot easier if the buttons that we had were physically smaller. I would also begin looking for materials earlier because the vest was much harder to find than I first thought it would be. There are also some small things that could be improved like making it less bulky and more comfortable.

Vocal Vest Prototype 2.0