

## Abstract

American Sign Language (ASL) is the primary language that many people within the Deaf and Hard of Hearing community learn. Because of this, English can be an unnecessary obstacle as it is often a secondary language to the signer, making traditional education or research participation difficult. Our team collaborated with the ASL Education Center to design an ASL-centric survey tool without relying on the written English language. After iteratively prototyping a tool focused on user experience and empowerment, we conducted seven user studies to solicit feedback from Deaf and Hard of Hearing users. Using this feedback, we analyzed participant responses to provide recommendations to guide further development of the ASL survey tool.

## Goals

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- Create prototypes that are intuitive and easy to use
- Explore what aspects of ASL design are more effective than English
- Define areas that have room for improvement
- Create a system that users want to use
- Make users feel empowered while using the survey
- Develop software that is linguistically and culturally appropriate
- Represent the Deaf community

## Acknowledgements

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## Design Process

April 22, 2022 at 12:40 PM

### Research

- Existing ASL technology
- Previous MQP and lab work

### Ideate

- Question types
- Functionality and mechanics
- Visuals

### Propose

- Present to collaborators
- Gather feedback

### Revise

- Integrate feedback
- Return to ideation phase and repeat

### Build

- Polish designs
- Embed videos
- Create prototypes

### Test

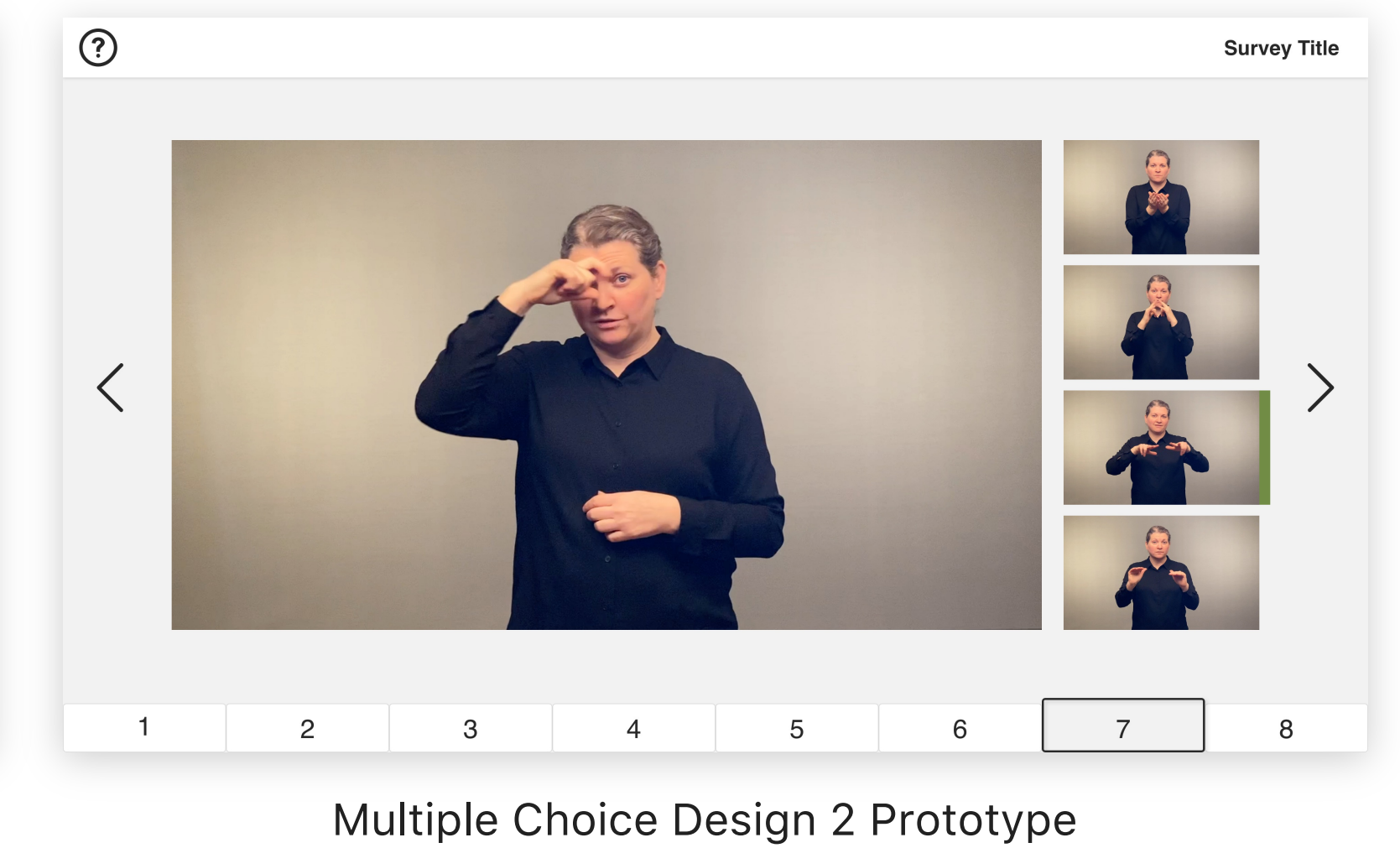
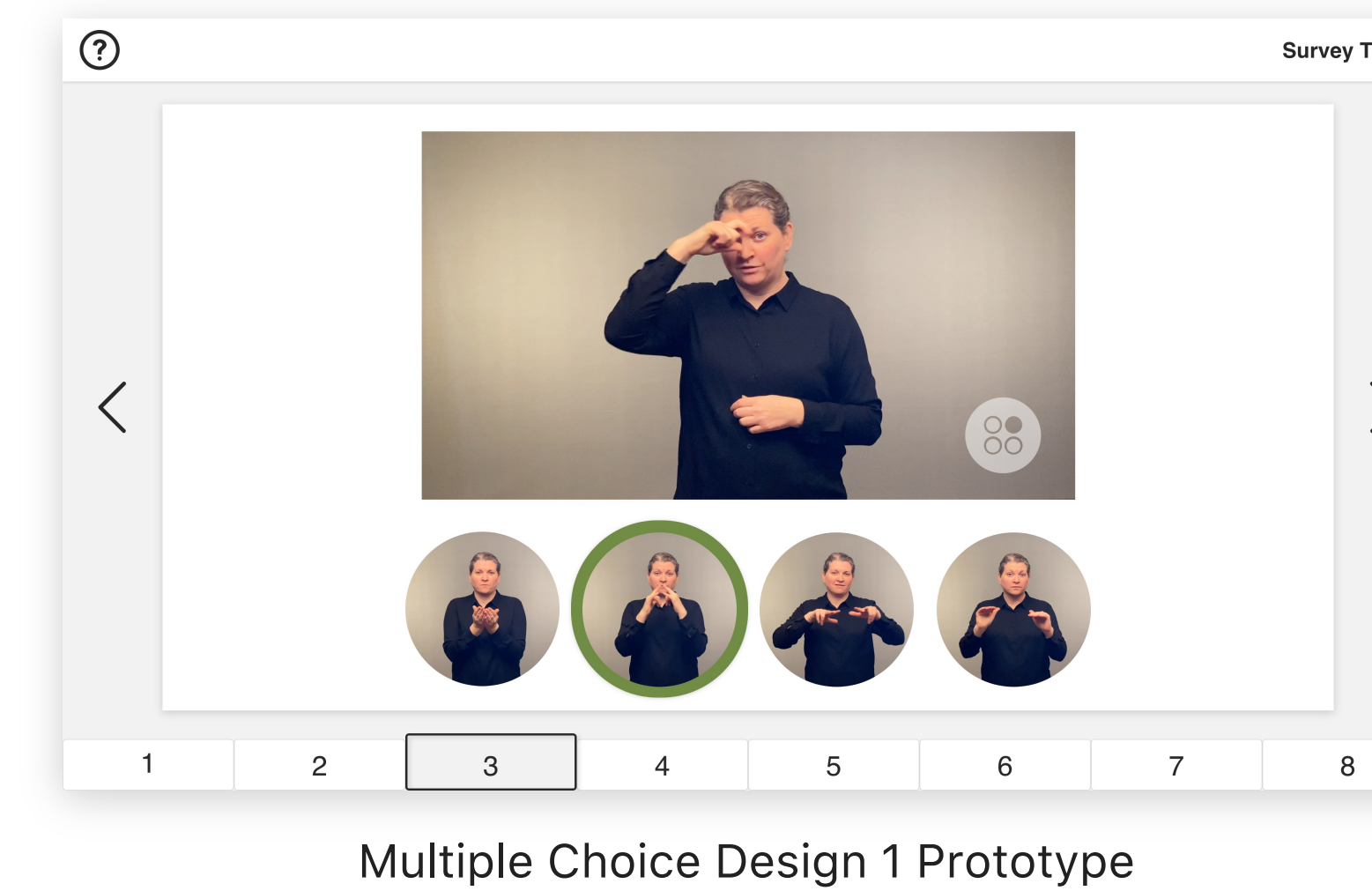
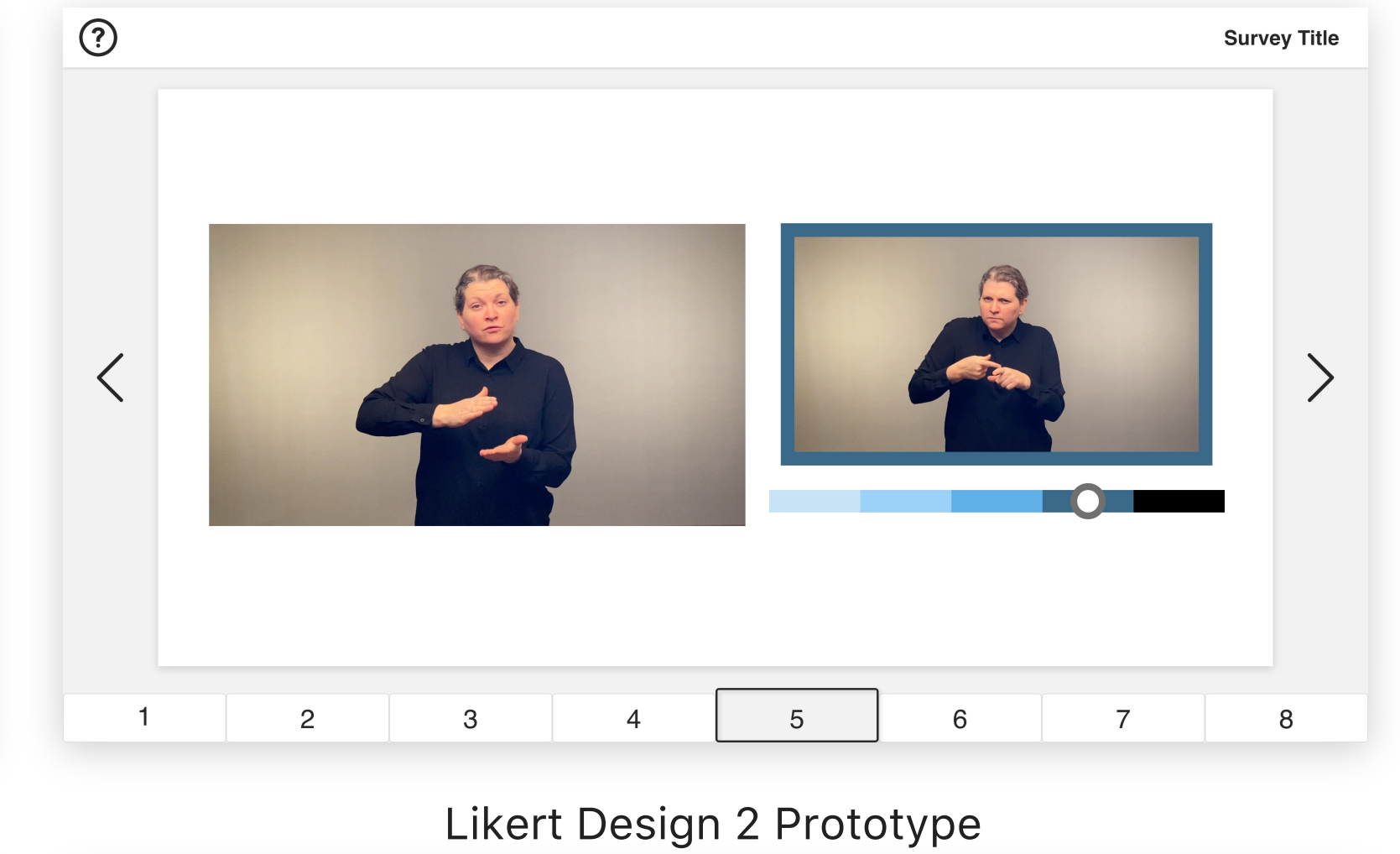
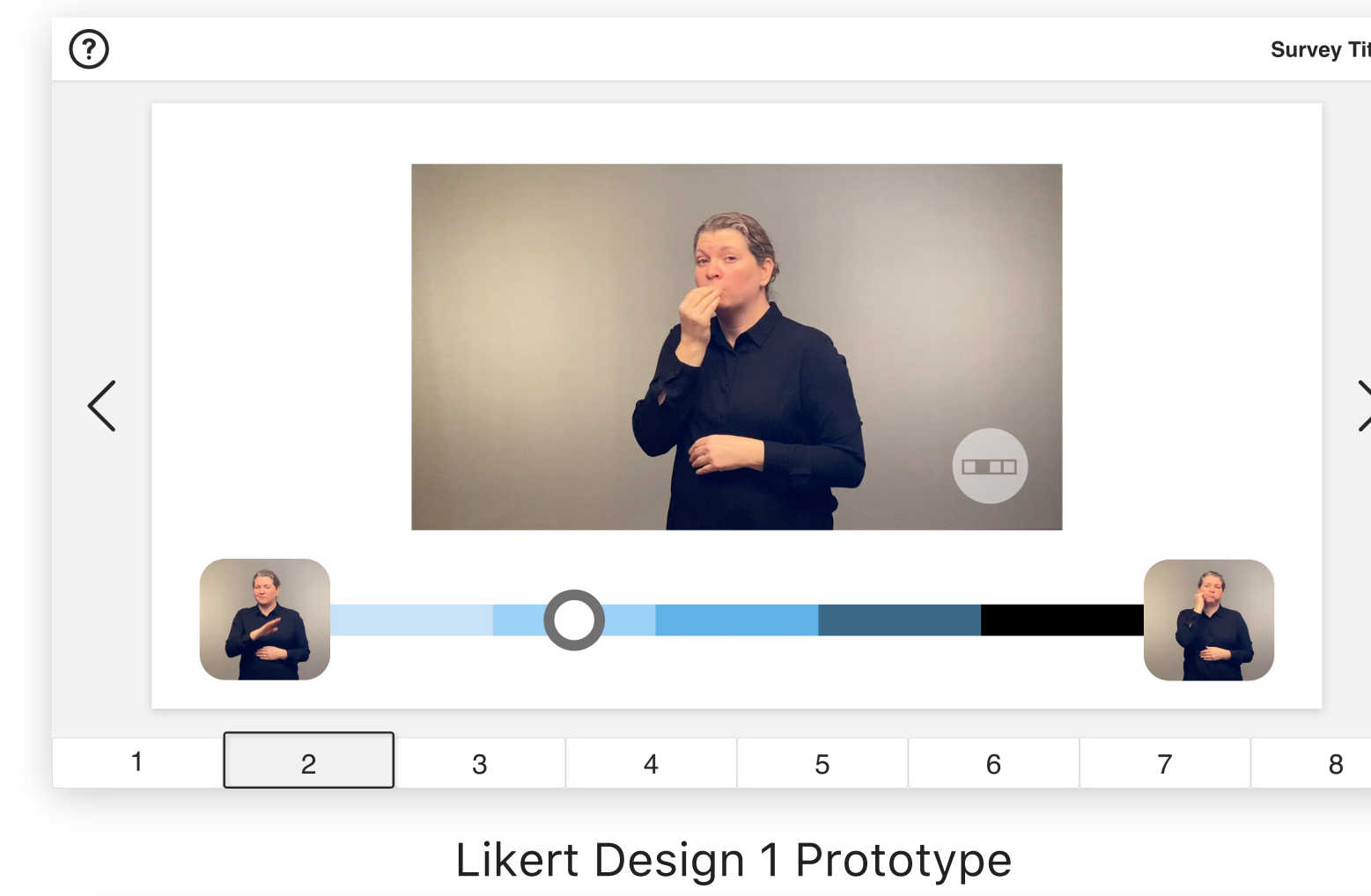
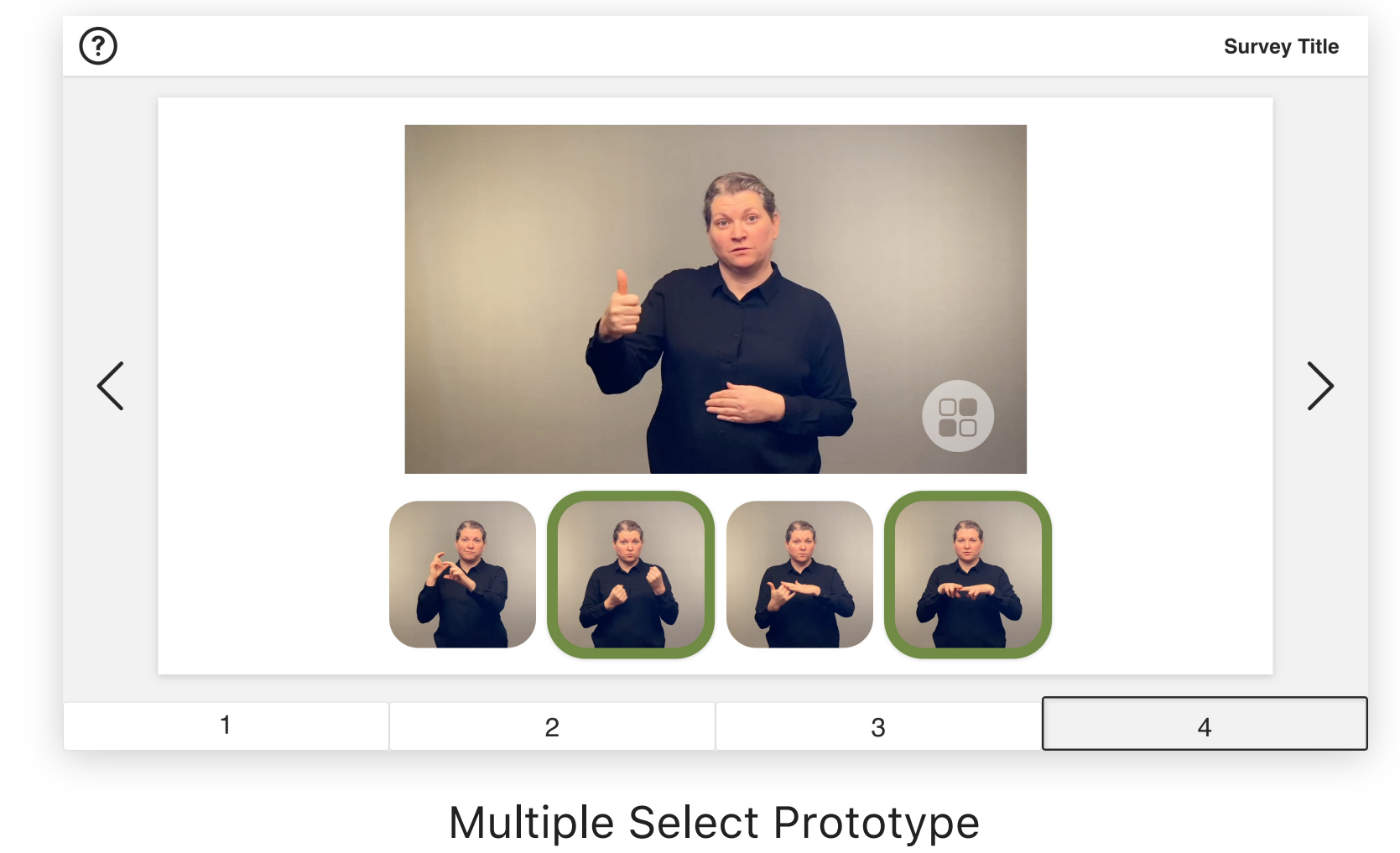
- Design a within-subjects user study
- Write study script
- Observe participants

### Analyze

- Conduct qualitative data analysis
- Synthesize participant feedback
- Recommend changes

## Prototype Designs

- Created fully-responsive interactive prototypes using Adobe XD
- Users were able to hover over videos to play and click to select their answer
- Tested colors for colorblind accessibility



## User Study Findings

Through our user studies, we found that most users were able to navigate the prototypes quickly. While users found the concept of an entirely ASL-based website design empowering, they suggested a few scenarios where the tool could use English to provide help or clarification. Many users expressed a desire for the videos to be larger, indicating an area of improvement for future development. By adding hoverplay functionality and video thumbnails to show answer previews, users felt an increased alignment to ASL culture and standards they had not seen before in similar studies. All participants felt represented and empowered in the design of this tool and voiced their support for further iterations.