

# Assisting with the Iterative Development of Instructional Support for Older Adults Learning the Amazon Echo

Kyreon Williams

Department of Interdisciplinary Health Sciences, College of Applied Health

## Background

By 2050, population of older adults over the age of 65 within the United States is estimated to double

With increasing age comes need to ensure older adults have sufficient support for maintaining their independence their desire to age-in-place.

Technologies like digital home assistants (DHAs; e.g., Amazon Echo) can help support older adults in maintaining or improving their quality of life

May be especially beneficial for those living with mobility disabilities to help with not only activities of daily living but also controlling their environment (e.g., when connected to other tech like smart plugs, smart lights)

These devices generally do not come with appropriate instructional resources designed with older adults in mind, making them difficult to learn for this population

**GOAL:** Develop and maintain up-to-date instructional protocols for older adults to help them set up and learn to use the Amazon Echo Show and connected environmental technologies (Amazon smart plug, Philips Hue smart light bulb) to benefit from these devices

Amazon Echo Show 8"



Amazon smart plug



Philips Hue smart light bulb



## Design Method

### Initial Task Analysis

Recording step-by-step details to accomplish task goals (e.g., setting up, using technology)  
Ensuring all potential decisions and actions are covered accurately  
'Chunking' steps to best accommodate older adults

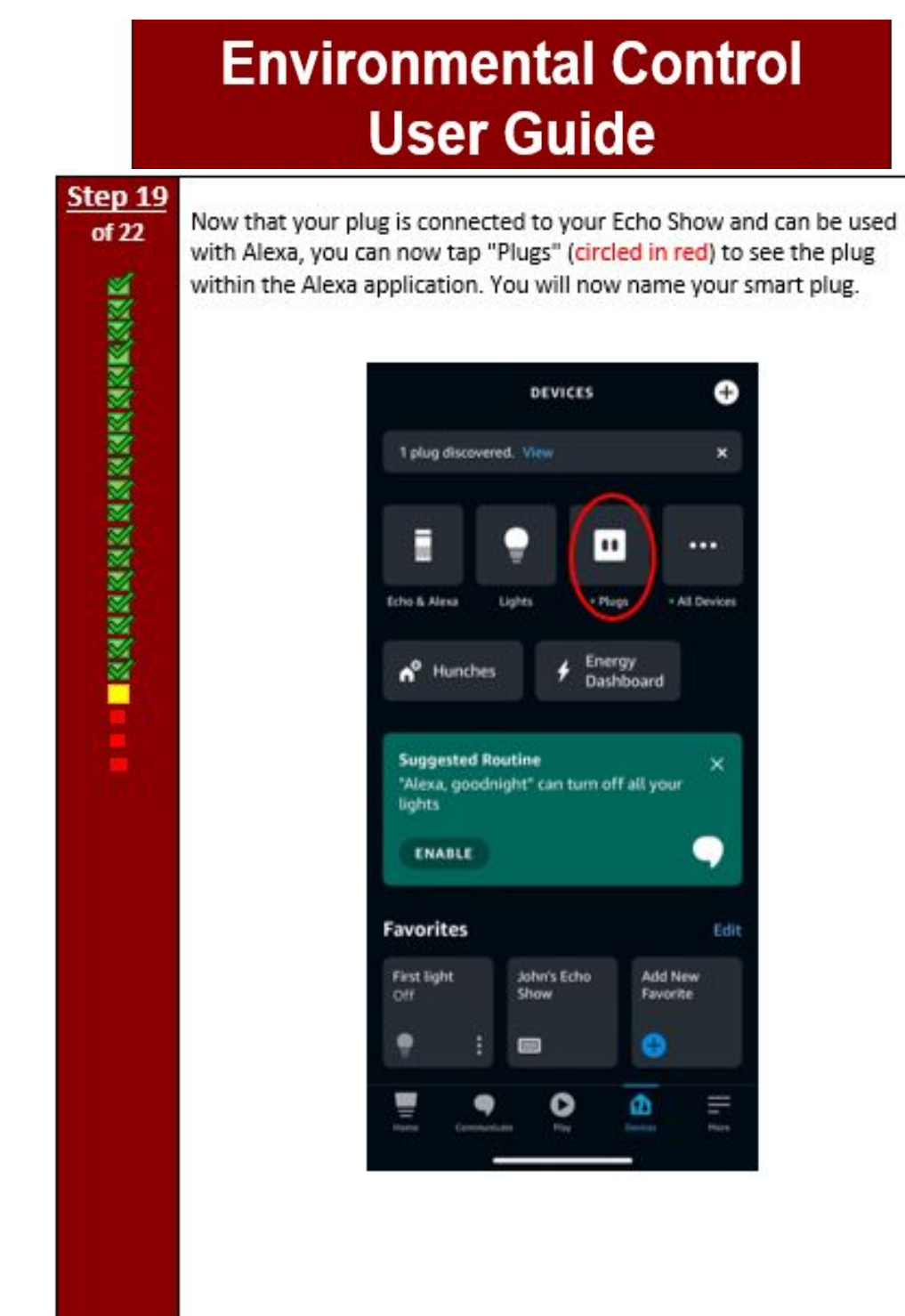
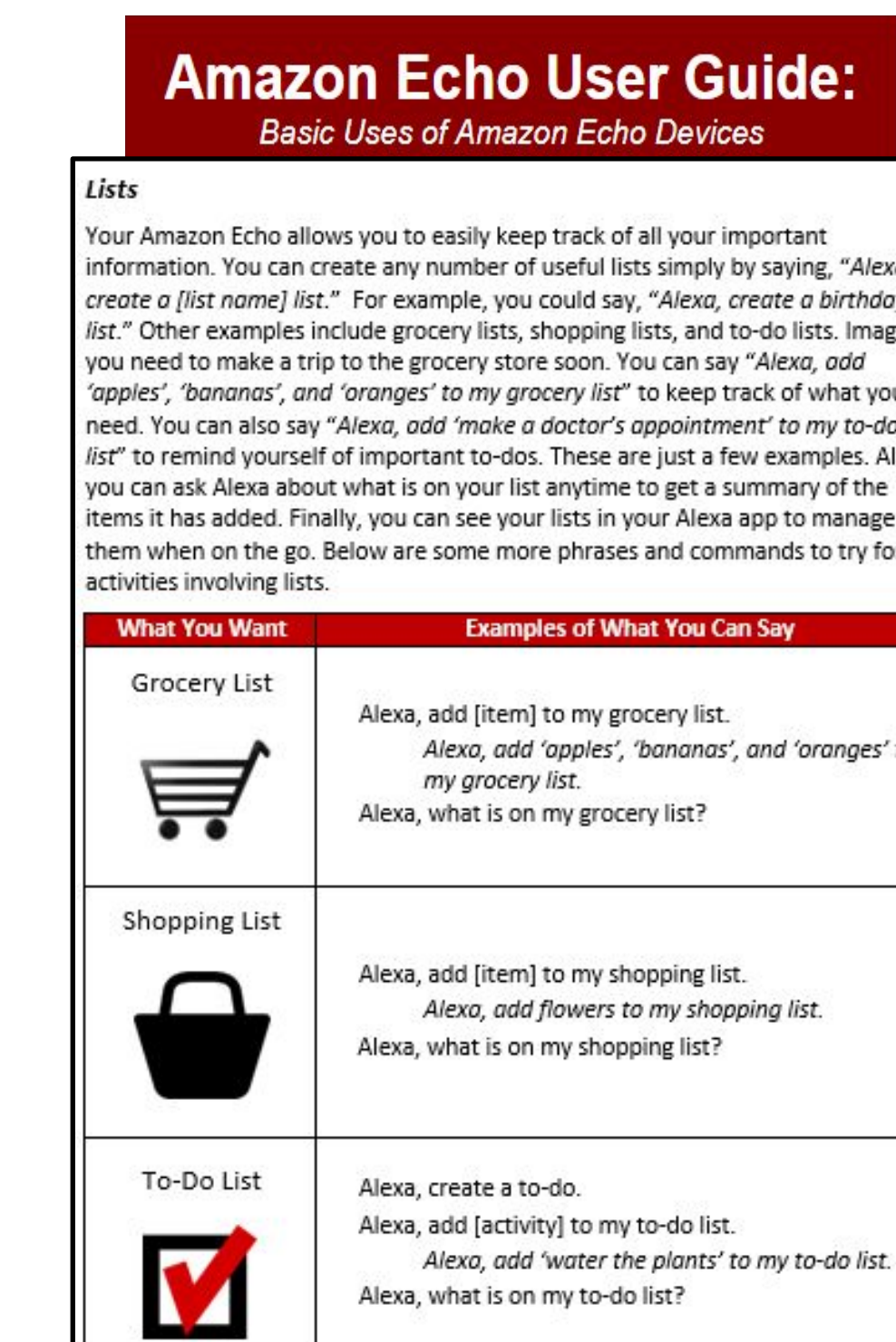
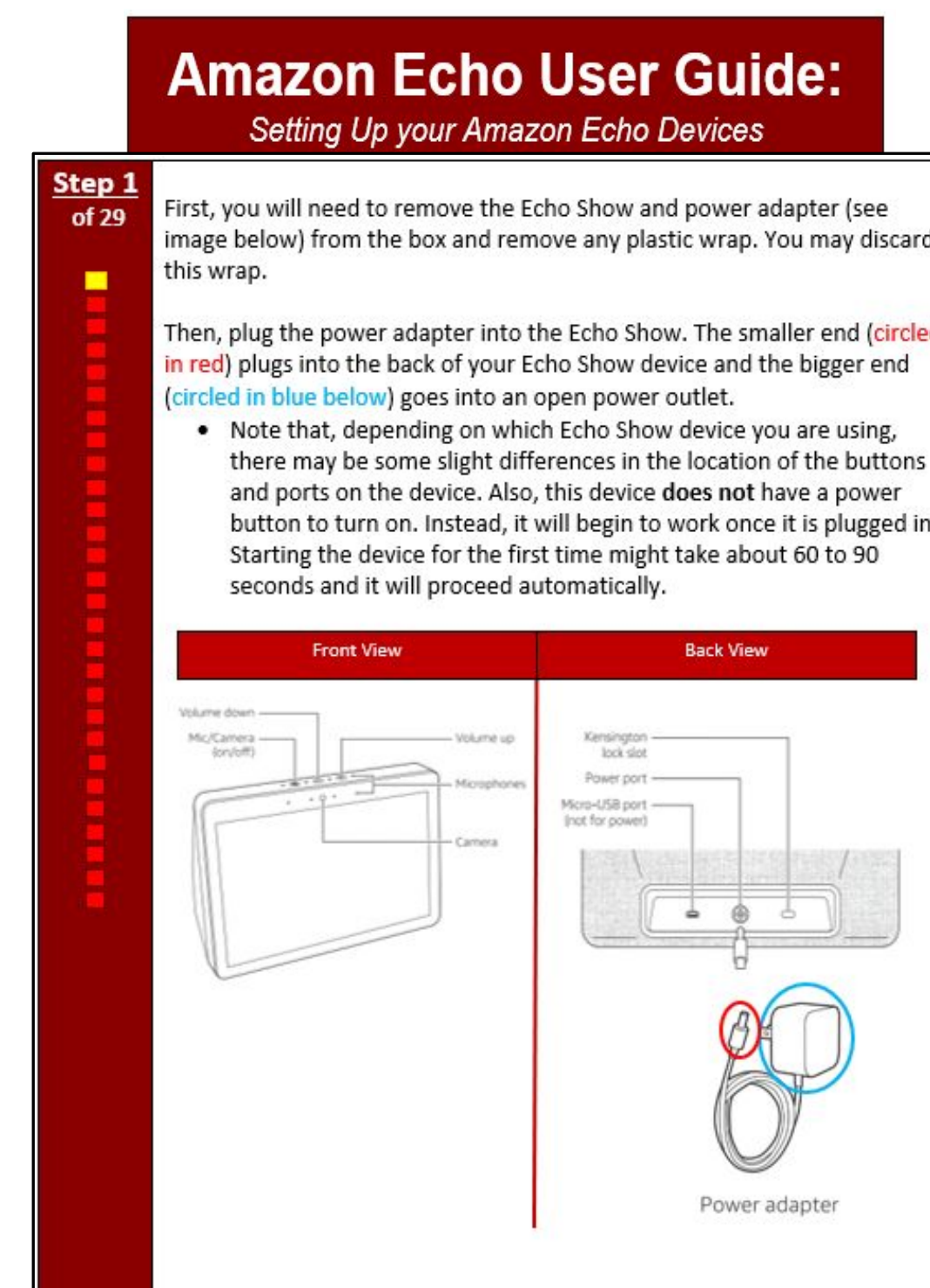
### Design Guides with Human Factors Principles

Ensuring content is appropriately designed for older adults. Examples include:  
- Large font  
- Supportive graphics  
- Appropriate vocabulary and directions  
- Logical order and easy to follow

### Iterative User Testing

Conducting user testing with a variety of relevant individuals:  
- Subject Matter Experts  
- Older Adults without mobility disability  
- Older Adults with mobility disability  
Target population for future field trial

## Instructional Guide Examples:



## Continued Iterative Design

As guides will be used in an upcoming field trial to assess the utility and usability of digital home assistants (Amazon Echo) and connected technologies for older adults with mobility disability, **my contributions have included:**

- Ensuring the guides are constantly updated to account for changes in the setup and use process for the technologies
- Prepare them for redistribution to our research partners (University of Chicago, TechSage RERC, General distribution)
- Prepare for their use as part of a "Digital Assistance in a Box" technology suite to best support participants in the field trial

## Conclusions

### General

It is imperative to design and test technologies and their instructional materials to support the needs and opinion of the older population.

Developing and updating these guides hold great potential in supporting older adults in fully benefitting from the support smart technology can provide

### What I've Learned

I've learned about the process of iterative development of dedicated instructional guides to help older adults improve their learning of smart technologies like the Amazon Echo Show and related technologies.

I've gained detailed knowledge about and experience with aging, health, and technology research which is focus of my academic concentration.