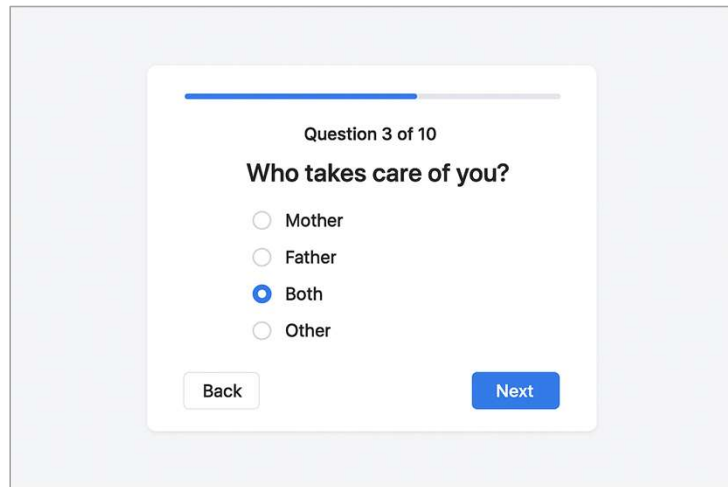


# ETS Family Structure Usability Test Case Study

Presented by Theresa Wilkinson



## Family Structure Usability Test Case Study



Question 3 of 10

**Who takes care of you?**

Mother

Father

Both

Other

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### Agenda

- Project Overview
- Process
- Key Findings
- Readability & Communication
- Recommendations
- Impact
- Contact



**Role:** Lead UX Strategy & Research

**Organization:** ETS

**Duration:** 20 months

**Project Overview:** Directed research across multiple digital projects to deliver actionable recommendations that improved student understanding and test performance.

**Key Contributions:**

- Identified usability barriers and prioritized accessibility fixes by combining qualitative and quantitative data.
- Achieved a **25% improvement** in comprehension among 4th-grade users.
- Produced high-impact reports and engaging video highlight reels that effectively communicated user insights to executive and stakeholder audiences.



Students were asked to report on their household composition, caregivers, and caregiver employment/education. Two variants of the questionnaire were tested:

- **Variant A:** Sequential creation of households
- **Variant B:** Concurrent creation of households

**Goal:** Identify which variant minimized confusion, improved usability, and captured accurate data while accommodating multiple households.



### **Usability Testing, Cognitive Interviews & Think-Aloud Protocol**

We conducted usability testing with 36 students across grades 4, 8, and 12, including both single- and multiple-household participants. Using cognitive interviews and think-aloud techniques, we observed how students interacted with the interface, identifying points of confusion and areas where task completion was difficult.

#### **Activities Evaluated:**

- Household selection and assignment
- Caregiver identification
- Caregiver education and employment questions
- Progress tracking
- Home summary and exit screens

This testing informed design improvements to make the interface more intuitive and reduce user errors.



### Household Assignment

- **Variant B preferred** by students with multiple homes; concurrent display helped avoid confusion.
- Students struggled initially with understanding that selections applied to both homes.
- **Quotes:**
  - FS1504 (Grade 8, 2+ homes): *“At first I didn’t realize it said two homes... but then I soon realized, and I went back.”*
  - FS051 (Grade 12, 2+ homes): *“I really liked it. I liked how you could drag it... if you have a hard time reading, it would be easy because they’re all different colors.”*



### Selection & Drag-and-Drop

- Students in Variant A: **76% tried to click, 6% dragged, 18% other actions.**
- Students in Variant B: **100% successfully dragged** icons into place.
  - ➔ *Finding:* Drag-and-drop interaction was clearer and more intuitive in Variant B.

### Progress Tracking

- Variant A (simple indicator): **77% did not notice** the progress indicator.
- Variant B (progress bar): **74% noticed** it and found it helpful for understanding completion stages.
  - ➔ *Finding:* The progress bar significantly improved engagement and task awareness.
- *Quote:* FS011 (Grade 8, 1 home): "I was looking at the progress bar. It was telling me what stages that I was going to on the questions."



### Caregiver Identification

- Most students understood “caregiver” and could select individuals over 18.
- Some minor confusion about icon representation and wording.
- **Quote:** FS099 (Grade 8, 2+ homes): *“It’s someone who is there to provide emotional support... make sure you eat, sleep, and just make sure you’re okay.”*

### Caregiver Employment & Education

- Questions were generally easy for older students; younger students sometimes struggled with wording.
- **Quote:** FS048 (Grade 4, 1 home): *“I don’t know what it says.”*

Confusion mostly arose for fourth graders when interpreting employment terms or caregiver education.



### Scrolling Usability

- Students needed to scroll to see both caregiver employment and education questions.
- Some students found scrolling natural; others were surprised.
- **Quote:** FS067 (Grade 4, 1 home): *"I didn't actually know that it scrolled down. My mom had to show me."*

### Home Summary & Exit Screens

- Students understood they could review and edit prior responses.
- Younger students sometimes confused the final screen with additional questions.
- **Quote:** FS1508 (Grade 8, 1 home): *"I thought there was going to be another page with different questions... but it was closing out the section."*



- **Observation:** Students had trouble understanding some terminology throughout the survey.
- **Action:** I created **video reels** highlighting real-time student confusion and think-aloud responses.
- **Impact:** Reels were shown to the client to clearly demonstrate usability issues and inform **simplified language and visual improvements**.
- **Quote from video reel:** FS067 (Grade 4, 1 home): *“I don’t know which one of my parents works for taxes.”*

**Household Assignment**

- Use Variant B (concurrent household creation).
- Modify Variant B to allow **assigning individuals to multiple homes simultaneously**.

**Selection Interaction**

- Proceed with drag-and-drop functionality.
- Pretest accessibility for keyboard users.

**Progress Tracking**

- Use the progress bar from Variant B for a better student experience.

**Readability & Terminology**

- Simplify language for younger students (grades 4 and 8).
- Pretest understanding of “caregiver” and “home” definitions.

**Visual & Icon Clarity**

- Minor modifications to icons to reduce potential confusion while remaining inclusive.

**Scrolling & Navigation**

- Either allow horizontal drag or adjust layout to prevent misinterpretation.

**Usability Severity Summary**

- Six issues were rated as *major usability problems*—primarily related to navigation, unclear directions, and confusing terminology.
- Fixing these issues improved time on task and reduced confusion.



- **All students** were able to complete the family structure questionnaire.
- Variant B **reduced confusion** and had **shorter completion times (366 seconds vs 405 seconds for Variant A)**.
- Quantitative analysis confirmed improvements:
  - **74% noticed the progress bar vs 23% for the simple indicator**
  - **100% success rate** with drag-and-drop interaction
  - **10% faster task completion overall**
- Insights informed **next iteration** of survey design, including **clearer language, improved progress tracking, and visual guidance**.

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