Accessible Product Design
for Pearson Education

by John Walker

WALKER | ACCESSIBILITY

Project Brief

Pearson Education hired me to consult on an accessible product redesign for Versant, an English skills testing app.

I updated the visual design to align with current Pearson standards while ensuring that every component met accessibility standards.

I collaborated across product, design, and engineering to ensure everyone understood their role in creating accessible experiences.
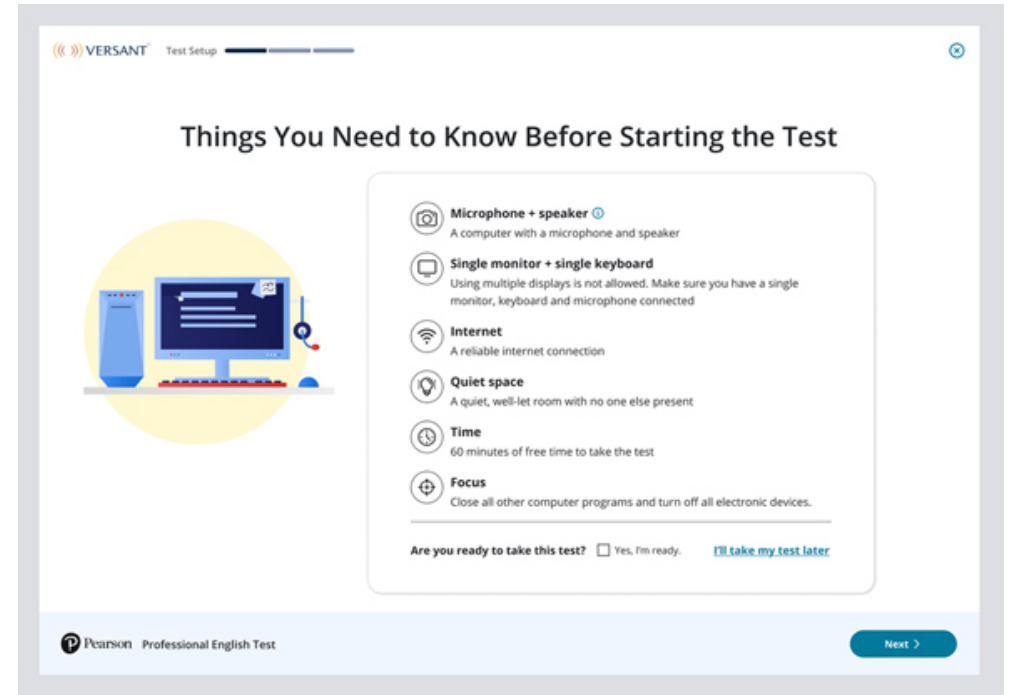
I also mentored the engineers in accessible code best practices since the team had little experience in this area.

Visual comparison

Existing design
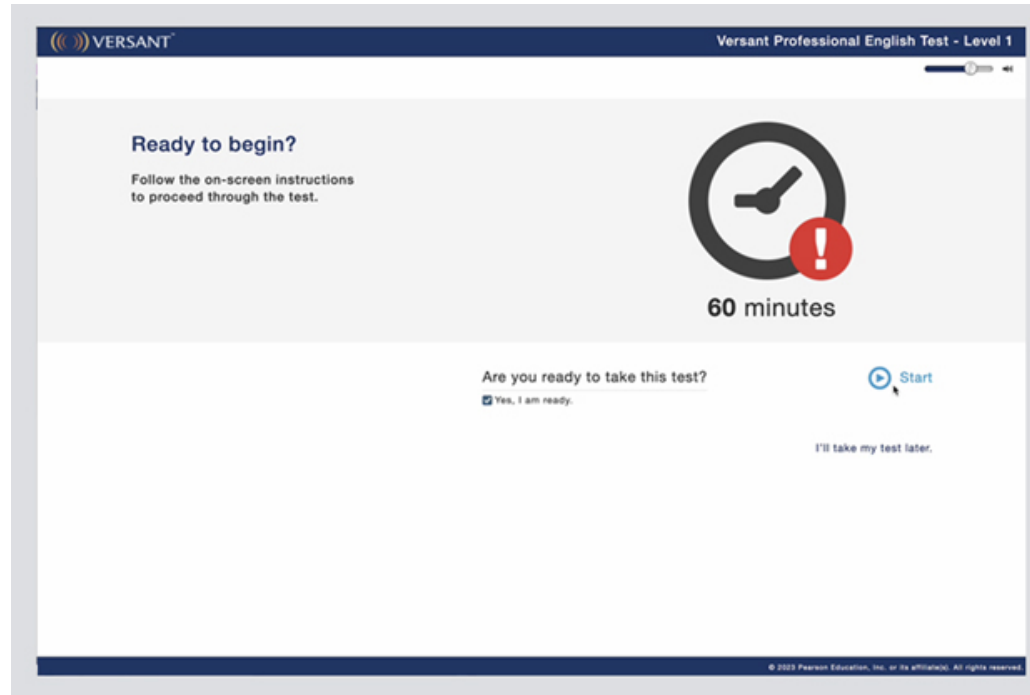
My redesign

MY PROCESS

Step 1

Evaluate current accessibility

I reviewed results from a third-party accessibility evaluation

- The survey documented 23 major accessibility failures in the app

- Issues ranged from simple (missing alt text) to complicated (visual timers not being announced by the screen reader in real time)

Vendor Accessibility Defects List

#	Use Case Description	Issue Description	Issue Severity	Issue Fix Date Month Year	Notes/Workaround
1	Ready to Begin Page	"I'm Ready to Start the Test" checkbox does not have a label so a user is not able to identify this element by label.	Critical	27-Jul-22	Complete
2	Ready to Begin Page	Focus goes to the start button, but the checkbox above is required before clicking start.	Critical	27-Jul-22	Complete
3	Test overview Page	Missing a contextual label for the "Next" button link on the Test Overview page. Screen reader does not read out the contents of the table.	High	27-Jul-22	Complete
4	Headphone Volume check	Page does not contain at least one main landmark and may make it harder to navigate.	Critical	30-Sep-22	In Progress
5	Interstitial dialog boxes that check for system compatibility	Screen reader did not provide contextual information.	High	30-Sep-22	In Progress
6	Headphone Volume check	1,2,3,4 text does not receive focus automatically.	High	30-Sep-22	In Progress to improve focus order and audio instructions on this page.
7	Start test	Start "button" coded as a link instead of a button.	Medium	30-Sep-22	In Progress
8	During the test, volume controls inaccessible via JAWS and NVDA, accessible via VoiceOver. JAWS accesses via pass-through key	The test contains audio prompts, so the user may need to adjust the volume during the test. Controls are accessible with VoiceOver but not intuitive with JAWS.	High	30-Jun-23	Controls are accessible via VoiceOver.
9	Email Writing Task	E-mail Writing on Versant Writing Test: Focus on edit field before instructions.	High	30-Jun-23	
10	Sentence Completion Task	Items read aloud until text field is encountered, item content after text field not read automatically.	High	30-Jun-23	
11	Forms Mode on Written Tasks	JAWS does not enter forms mode automatically in a consistent manner and can't easily determine whether the user wants to type or navigate with keyboard shortcuts	High	30-Jun-23	
12	Introduction screen before the test starts	Text alternatives not provided for the following: - Welcome Image, Quiet Please Image, Ready to Begin	Low	30-Jun-23	The images convey information that is presented as text on the screen. There is an audio instruction on this page.
13	Ready to Begin Page	Text alternatives not provided for Ready to Begin graphic	Low	30-Jun-23	Screen has audio instruction
14	Headphone Volume check	Arrow image does not have text alternative	Low	30-Jun-23	Arrow image does not provide any additional information as long as user can navigate to the volume controls.
15	Sentence Repeat Task	The alternating Speech bubble and headphone graphic are not labeled.	Medium	30-Jun-23	Instructions and a sample items are presented before each new question type so that the test taker knows what to expect in the task. Icons indicating speaking or listening turn will be enhanced to leverage the built-in accessibility features of the delivery platform and provide feedback that is not only visual.
16	Sentence Build Task	Tabindex set to greater than 0 can cause confusion	Medium	30-Jun-23	
17	Optional Survey	Form control is missing labels making it difficult to navigate the content.	Medium	30-Jun-23	Has no impact on the scores and entirely optional with specific instructions on skipping the section.
18	During the test, timer is not announced and remaining time Is not announced.	The test taker can only get timing information by navigating to the timer.	High	Needs discussion	Time available for each activity is part of the instructions for the specific activity type. The onscreen timer and remaining time are not announced without specific interactions with the timer because a countdown could be distracting during the test and may also become part of the recorded response on spoken items and negatively impact speech recognition and scoring. We will take an approach that gives visually impaired test-takers an indication of time remaining either through a key combination or other accessibility feature available in the delivery platform. The exact implementation and final solution needs more extensive research.
19	During the test, the test taker cannot pause the test or request additional time	The test is timed allowing the test taker a fixed time to respond to each item.	High	Needs discussion	Allowing the user to pause/stop the audio will impact the test design as we are assessing the ability to respond to audio inputs, as it happens in real-life situations.
20	Passage Recall	Passage Reconstruction on Versant Writing Test: Passages should be read aloud by assistive technology and receive focus in an intuitive order.	High	Needs discussion	The construct underlying some of these task types is entirely dependent on test-takers reading a prompt, not listening to it. A test takers ability to produce or understand English may be estimated using other tests offered by Pearson that do not require reading as a modality (listening and speaking, VET for example).
21	Listen & Repeat	No captions were produced for audio only content	High	Needs discussion	The construct underlying some of these item types is entirely dependent on test-takers listening to the prompt, not reading it. A test takers ability to produce or understand English can be estimated using other tests offered by Pearson that do not require listening as a modality (reading and writing, VWT for example)

Step 2
Manual survey

I manually surveyed the app using the three major screen readers

- I discovered additional accessibility failures not uncovered by the vendor evaluation

- I documented all failures in a screen-by-screen visual document, as a source of truth that all teams could access and understand

Step 3
Product comparison

I manually surveyed a similar Pearson product

- A Pearson team had done an accessibility review prior to product development

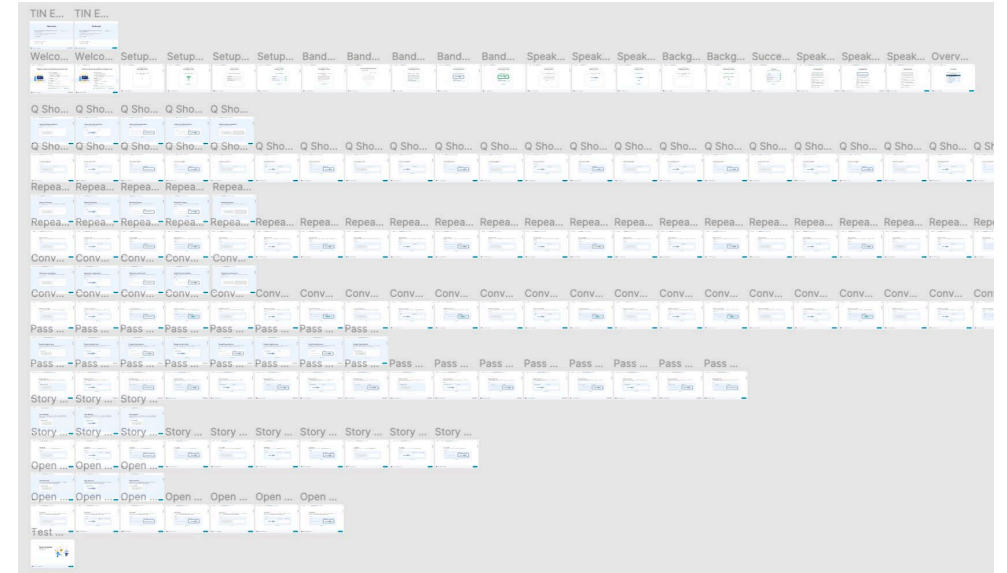- However, I uncovered many accessibility issues the review had not anticipated

Step 4

New screen designs

Based on research, I created new flows

- Founded a new design system

- Implemented a visual redesign

- Tested components in development

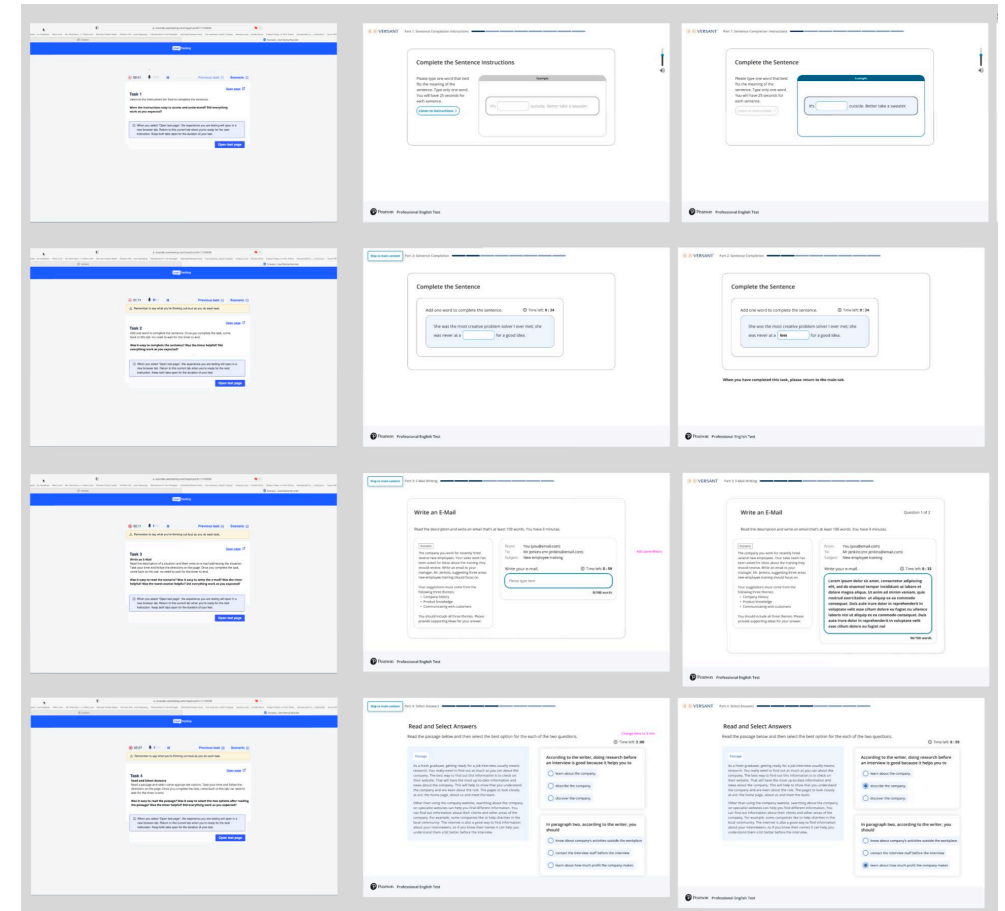- Collaborated with engineers to iterate code for better accessibility and ease of use

Step 5

Screen reader user testing

I worked with engineers to produce a small-scale code prototype

- The prototype included all interactive elements

- It also leveraged extensive use of ARIA live regions for real-time updates on timers etc.

- I ran remote user testing sessions with screen reader users

- I compiled test results to inform further design iterations

Step 6
Final product development

Currently iterating to final designs based on testing results

- All components have been validated for accessibility

- The app satisfies all delivery requirements for Amazon, the app's first client