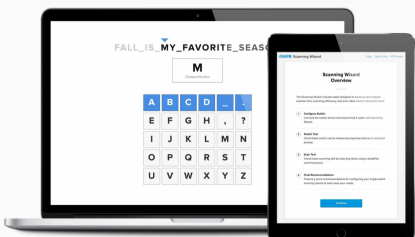


Scanning Wizard Web App

Koester Performance Research

KPR is empowering the severely disabled by helping them use a computer up to 170% faster.



The Scanning Wizard web app identifies the best configuration for a disabled person's text-entry system, dramatically increasing their communication speed.

People with severe physical impairments can find it very difficult to use a standard keyboard or mouse. Some operate a computer using only a single button or switch.

In these [single-switch scanning systems](#), the computer cycles slowly through different choices. When it arrives at an option the user wants, they activate their switch. Text entry speeds at just one word/minute are common.

[Koester Performance Research](#) (KPR) develops tools that improve computer access for people with disabilities.

In 2014, Dr. Heidi Koester and a colleague devised a [method for improving the text-entry speed](#) of people who use single-switch scanners. With a grant from the [NIH](#), Koester came to Atomic Object looking to develop a tool that would enable users across the globe to benefit from her findings.



Working closely together, Koester and the Atomic team developed [Scanning Wizard](#), an elegant web app that guides single-switch users through a series of tasks designed to measure their response time and scanning effectiveness.

Scanning Wizard uses these tests to generate individually-tailored recommendations for each user's system, including adjustments to their scan speed, delay, and keyboard layout. The system also supports double-switch users and people who use symbols other than letters in their scanning array.

Scanning Wizard allows users to create an online account and store their results, but also has an offline mode with robust local data storage. Health practitioners can use a special administrative version to manage data from multiple users.

Scanning Wizard has really exceeded my expectations. I went into the project with requirements but no real picture of what the end product would be like, and I came out with something that represents the project in a great way. Compared to other projects I've worked on, this app is the best designed—both the code and the visual design. It's extremely polished.

Heidi Koester, Ph.D., President

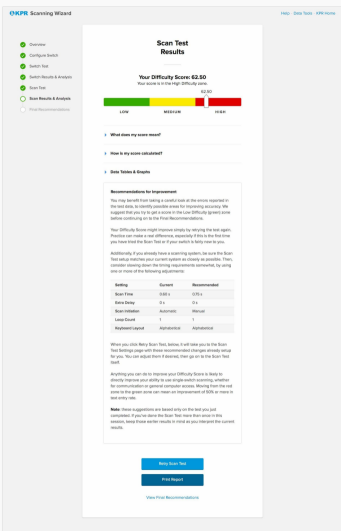


Results

- An ongoing field study found that the Scanning Wizard helps single-switch users increase their text-entry speed by an average of 73% — with some users improving as much as 170%.
- Scanning Wizard was designed so that Dr. Koester can edit the app's code and adjust the algorithm, incorporating knowledge gathered during the field study.

Initial studies have shown that, by adjusting the settings to the user's ability, you can boost their speed significantly. It's a small population but a large potential impact.

Heidi Koester, Ph.D., President



Atomic provided visual design and web app development for Scanning Wizard using Ember.js.

Project domain(s)



Services provided

Software Product Design
User Research
Information Architecture
Visual Design
Software Development
User Testing
Explanatory Testing
Deployment

Tools used

Ember.js
D3.js