INFO 463
Final Project: User Testing Report
Group 1
Trevor Bruecher, Alyxis Burks, Sarah Feldmann, Tammy Yu

Introduction

DragTap is a text input technique designed for text input on small devices -- specifically the 42mm Apple Watch. DragTap splits the alphabet into 4 categories: A-F, G-M, N-T, and U-Z. Users can input text by tapping on an alphabet category and then dragging and releasing on the desired character. After, the user will return to the home screen. Additionally, the user can also input text by tapping on an alphabet category and then tapping on a letter, which will then remain on the same screen instead of returning to the home screen. We conducted user testing for our input technique, DragTap. The results of our user testing will help to explain the speed and accuracy that can be achieved using our input technique.

User Testing

To get a better understanding of how our prototype works, we conducted user testing on 3 participants. They were asked to input text using DragTap based on the given phrases in a database. Users were instructed to balance both speed and accuracy while using our technique, while also fixing errors as they are seen. Each user completed a total of 45 trials, 5 of which were practice trials and were discarded.

Results & Discussion

The results of our user testing varied by user. Our first user completed the user testing on a laptop using a mouse. This first user achieved an average of 8.9 words per minute (WPM) and 8.8 adjusted words per minute (AWPM). Our first user experienced an error rate of 3.2%, an uncorrected error rate of 1.1%, and a corrected error rate of 2.1%.

Our second user completed the user testing on a laptop using the trackpad. This second user achieved 5.5 WPM and 5.4 AWPM. This is much lower in comparison to our first user. However, this may be due to the fact that our second user spent more time correcting errors. Our second user experienced an error rate of 8.3%, a lower uncorrected error rate of 0.5%, and a higher corrected error rate of 7.8%. This could also be due to the different devices used as a mouse has a better speed accuracy trade off, and the trackpad is harder to operate as we saw in CS2.

Similar to our second user, our third user completed the user testing on a laptop using the trackpad. Our third user achieved 6.3 WPM and 6 AWPM. The WPM and AWPM of our third user was similar to the results achieved by our second user. This

may be due to using the same type of laptop and trackpad. However, their error rates vary. Our third user experienced an error rate of 9.6%, an uncorrected error rate of 4.1%, and a corrected error rate of 5.4%. This is most likely due to whether they noticed the errors or not.

Challenges

As with any user testing, our team faced some challenges. It was difficult getting our prototype to output the correct XML file containing our data results. Additionally, our prototype was only available using the computer file version of the prototype. This meant that our users had to use a laptop when testing DragTap. The process of using a mouse or trackpad to input text is more difficult than using a touchscreen. As a result, our data and results may not accurately reflect DragTap on our intended Apple Watch device.

There were also small errors in DragTap for example if you pressed the wrong group you would either have to press the wrong key or it would create a bug on the screen. I believe our testers would have had a lower error rate and higher WPM if these errors had no been present.

Conclusion

Overall, DragTap performed as our team had hoped. We were able to attain an average of 6.9 WPM across our 3 users using DragTap. This number is expected to be higher on a touchscreen device as opposed to using a mouse or trackpad on a laptop to input text, and be comparable to other small text entry devices. Our next steps for this project is to fix the current errors that were shown through user testing, and also test DragTap on a small text input device.

Raw Data

Subject 1
Words per minute: 8.9, Standard Deviation: .8
Adjusted words per minute: 8.8, Standard Deviation: .8
Total error rate: .032, Standard Deviation .037
Uncorrected error rate: .011, Standard Deviation: .026
Corrected error rate: .021, Standard Deviation: .029

Subject 2
Words per minute: 5.5, Standard Deviation: 1.5
Adjusted words per minute: 5.4, Standard Deviation: 1.5
Total error rate: .083, Standard Deviation .075
Uncorrected error rate: .005, Standard Deviation: .012
Corrected error rate: .078, Standard Deviation: .073

Subject 3
Words per minute: 6.3, Standard Deviation: 1.3
Adjusted words per minute: 6, Standard Deviation: 1.4
Total error rate: .096, Standard Deviation .084
Uncorrected error rate: .041, Standard Deviation: .048
Corrected error rate: .054, Standard Deviation: .047