

Using Compass Software

Using Compass Software to Improve Computer Access Services

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COMPASS SOFTWARE

Assistive technology (AT) practitioners need effective methods of demonstrating the rationale behind their decisions and the outcome of those decisions. In the area of computer access, Compass software provides clear evidence to show which input device and display settings best meet the user's needs.

Compass includes eight skill tests in three categories (pointing device use, text entry, and switch use). Each test is configurable to match it properly to the client's needs. Each test run presents a series of trials, during which the speed and accuracy of user actions are recorded. Following the test, Compass summarizes results, providing trial-by-trial detail if desired. Data are presented in an easy-to-understand format that can be used in reports and letters of justification. All Compass tests are compatible with a wide range of input devices. The software can also be used to assess the effect of varying output displays as well.

EXAMPLES OF USING COMPASS

Example #1 - Selecting a Text Entry Method

A high school student with cerebral palsy and her team were keen to ensure that she was using the most efficient method for text entry. For the past two years, she has been typing with a compact keyboard with filter keys. She has also been using a joystick mouse for mouse functions. On an initial trial of an onscreen keyboard with the joystick mouse, it appeared that this may be more efficient for her than the compact keyboard. It was agreed that some more objective data was needed to determine which keyboard option would be most efficient. Compass was set up to compare the two different options for text entry. The use of switch scanning was also discussed with the client, but she had no interest in using this input method.

Table 1 demonstrates that her overall performance was better with the compact keyboard. Whilst the total percentage of errors was higher, the net errors were clearly much lower. So despite misactivations and the need to correct these, the compact keyboard overall was faster and the final product was more accurate. Observations made during the tests supported these results. Compass provided an excellent tool for the client to identify the most efficient option for text entry. Future plans include examining the use of the compact keyboard with word prediction software to see if that will be more efficient for her.

Input method	Trial time (sec)	Typing Speed (wpm)	Total Errors	Net Errors
Compact Keyboard	28.82	1.46	20.42%	0%
Onscreen keyboard with joystick mouse	74.47	0.64	6.25%	6.25%

Table 1. Summary measures for text entry performance using a compact keyboard and an onscreen keyboard. Total Errors counts all errors made during the text entry process; Net Errors includes only those errors remaining at the end of the test.

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This example involves a high school student who has difficulty accessing a single switch. The team focused on the upper extremities and the head as the anatomical control site. Data were collected using the Compass Switch test for five different control sites.

	Correct Trials	Avg. Trial Time (sec)	Avg. Press Time (sec)	Avg. Release Time (sec)
Head Right	5/5	8.5	7.8	0.64
Head Left	5/5	9.0	8.5	0.57
Head Posterior	4/5	17.4	11.1	6.32
Right Hand	2/5	19.4	15.6	3.8
Right Finger	4/5	11.2	8.6	2.5

Table 2. Summary of Compass data for Example #2, showing speed of switch activation for 5 different control sites.

As shown in Table 2, the Compass data suggested that the "Head Right" and "Head Left" positions provided better switch access than the other sites. With the switch on either side of the head, the average release time was less than 1 second. In contrast, the student had difficulty releasing the switch when using any of the other switch positions. These data, in conjunction with observations, provided the rationale for the team to select a single switch set-up for this student.

Example #3 – Investigating Typing Performance

Compass has also been used in a research project to compare the Qwerty and Dvorak keyboard layouts for children with spastic diplegia in Queensland. Please see the full-length article for more information about this project.

CONCLUSIONS

With tools such as Compass software, it is now possible to get clear evidence about performance when providing computer access services. This evidence, when interpreted by a skilled professional or AT team, helps to: document the specific nature of any difficulties experienced by the client, identify the types of solutions that may yield improved performance, and measure the final outcome for the client.

COMPASS AVAILABILITY

Compass software is available directly from Koester Performance Research <www.kpronline.com>, as well as from Spectronics <www.spectronicsinoz.com>. A free 30-day trial of the software is also available.

The Full version of this article is available in the resource section of ARATA's website: www.arata.com.au

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