Efficiency of Keyboard Glove Layouts

Versus Conventional

Full Keyboard Layouts

Introduction

As computers shrink, keyboards remain one of the largest components. The standard keyboard is resistant to shrinking. Keyboard gloves have been used before and are ergonomic to use. Some key layouts on a glove would be easier to use than others. The purpose of this project is to find the most efficient key layout for a glove keyboard. Efficiency will be compared directly with words per minute (WPM) that can be typed with any specific layout. Ideally the researcher would like to find a layout that matches the input speed of a regular full sized keyboard. This would be difficult, if not impossible because people have had most practice with a full keyboard. To attempt to balance this out, people will be allowed to practice with the glove for a few minutes before beginning experimentation. Layouts will be based on commonly used methods on full keyboards, such as DEVORAK land QWERTY layouts. Since key layouts are practically infinite, as many as possible layouts will have to be tested.

Procedures

1. Create glove with 40 inputs following schematics 1.
2. Using common QWERT and DVORAK layouts as a basis create 5-10 layouts that seem to be efficient. Take into account other input methods people use, such as texting on a cell phone, and the keys on the glove that are easiest to use.
3. People will first be tested on a full keyboard. This will be that person's baseline to find their difference on the glove. Their WPM on a QWERTY keyboard will be found in 3 trials.
4. People should get practice with the glove. Most have had years of practice with a full keyboard so they will be most efficient and comfortable with those. To balance this out subjects should get 3 practice trials to get comfortable with the glove.
5. Five one minute trials will be taken on each layout and the speed on each will be recorded. At least 10 people should be tested, preferable more should be found to volunteer.
6. The average of the best 3 of 5 of each set of trials will be compared to the baseline on the full keyboard.
7. The researcher will calculate the percent difference between the two input methods and the layout with the smallest difference will be the most efficient.

Materials

1. Predrilled pcb board (7x9cm)
2. BS2
3. (4) pfc8574
4. Glove
5. 40 snap cloth pins
6. Lm317
7. Db9 female port
8. 9v dc jack
9. (7) 10kohm resistors
10. 1 μF cap
11. (3).1μf cap
12. 40 pin header
13. Jumperwires
14. Scrap Harddrive cable

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