



Testing Usability of Different Cursor Methods

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Usability Testing Goals

Goals of this test include:

- ★ Comparing usability of a trackpad, a mouse, and a Microsoft surface pen
- ★ With respect to this study, usability includes:
 - ☆ Temporal Efficiency
 - Time it takes user to complete drawing task
 - Quantitative
 - ☆ Accuracy
 - Quality of completion of the drawing task
 - Qualitative
- ★ What do these results mean?

Usability Test Approach

Goal is to find the **time** it takes for the user to **complete the task**.

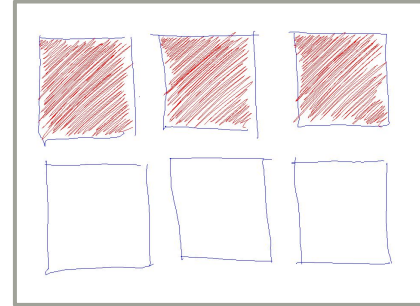
Participants were given a demonstration and the following instructions:

1. Draw **two rows** of **three squares** with the **blue** pencil (six total)
2. Colour in the **top three** squares with the **red** pencil

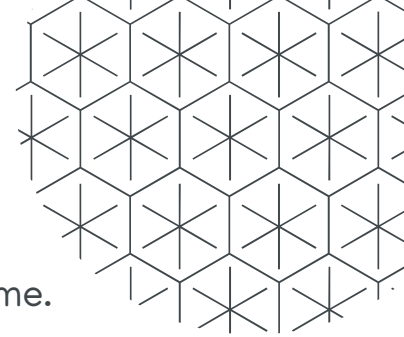
This task was performed on Microsoft Paint. Participants were requested to keep the size of their squares consistent with the demonstration.

The participants completed this task three times, each with a different cursor method.

The order in which cursor methods were used were randomized to decrease learning bias.



Results



As made visible in the chart below, the trackpad took the longest amount of time.

The mouse was **20%** faster than the trackpad.

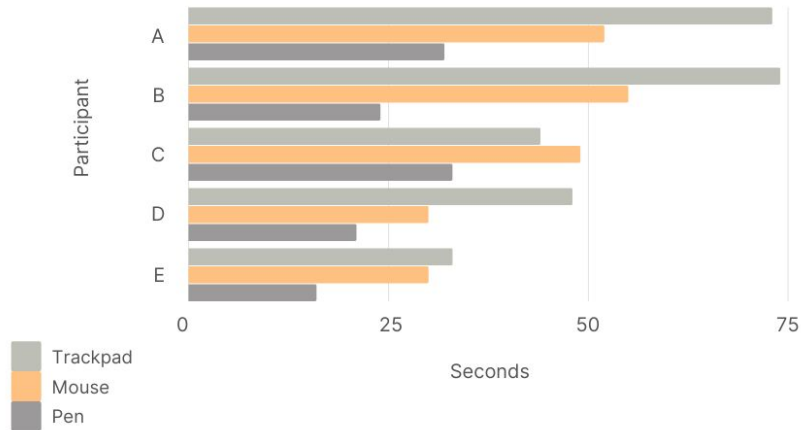
The pen was **42%** faster than the mouse, and **54%** faster than the trackpad.

Participant	Trackpad	Mouse	Surface Pen
A	73 sec.	52 sec.	32 sec.
B	74 sec.	55 sec.	24 sec.
C	44 sec.	49 sec.	33 sec.
D	48 sec.	30 sec.	21 sec.
E	33 sec.	30 sec.	16 sec.
Avg.	54 sec.	43 sec.	25 sec.

Results

Cursor Method Usability

This graph displays the time it took for each participant to complete the drawing task using each of the three different cursors methods.



Results

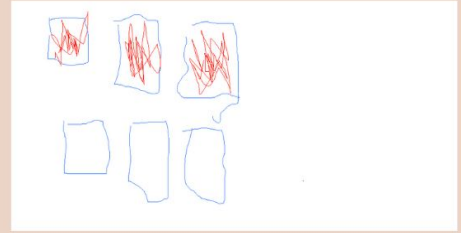
Although analyzing the quality of the completion of the task was not part of my initial intentions, I did notice a trend in the results.

As the results from Participant B display, not only was there **significant differences** in the **time** it took to complete the task, but also in the **quality** of completion.

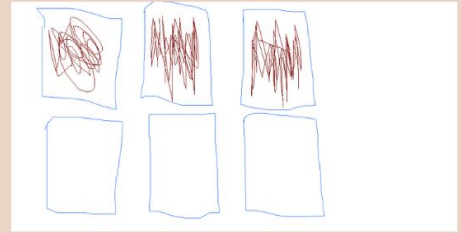
Throughout the data, the **trackpad** and the **mouse** give evidence of **significant challenges in accuracy**.

The results from the **pen**, compared to the other two methods, gives evidence of **significant success in accuracy**.

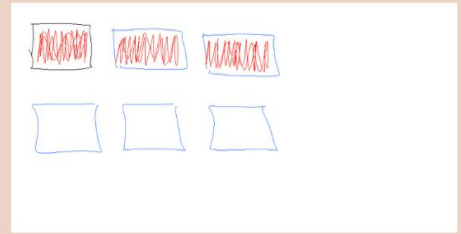
Trackpad (74 seconds)



Mouse (52 seconds)



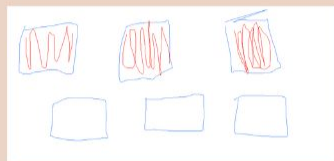
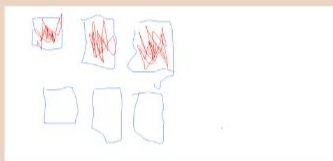
Surface Pen (32 seconds)



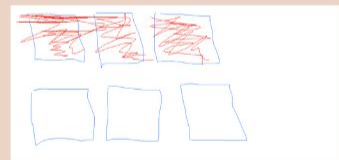
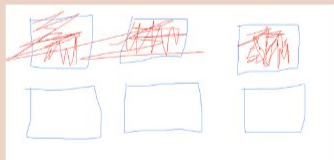
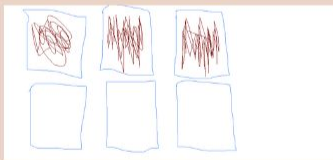
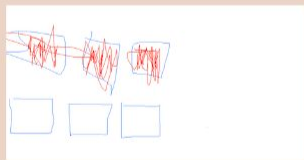


Results

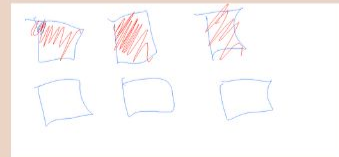
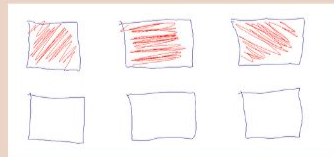
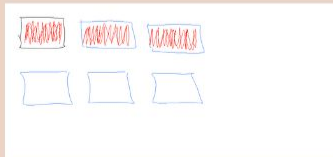
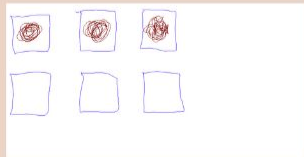
Trackpad



Mouse



Surface Pen



Analysis

What do these results mean?

For those consumers who desire greater usability of their device, this experiment has given evidence that options from best to least are

1. Microsoft Surface Pen
2. Mouse
3. Trackpad

That being said...

Discussion

There are various factors other than usability that might be at play when a consumer is choosing a cursor method for their laptop including (but not limited to):

- ★ Cost
- ★ Convenience
- ★ Portability

These factors fluctuate depending on the needs of the user. If you are a casual user who just desires to surf the internet, you might not need to be concerned with cursor method usability.

If you are a user looking for greater usability, it is good to know the specifications for these options so that you can make a more educated consumer decision.



**Thank you for
Listening!**

Any questions?