

The Stroop Effect



Introductions/Research

Much information can be found in the topic of human mind thinking using stroop effect.

This experiment is testing if color affects human memory. They were using 30 MCQs (collocations) and participants to the test. Throughout the experiment the final results were clear: color affects human memory which causes captivation of various words and images in the recall process.

(Please see reference slide)

This experiment is testing out the effects different colors had on students' moods in different spaces of the students' union complex. They used college students by asking questions and observing the colors they were also observing. The results of this research not only support most of the theories and results of other researchers but also reveal the psychological properties and effects of colors on the moods of individuals.

(Please see reference slide)

Research Continued

As stated in pubmed.gov, “Stroop interference is often taken as evidence for reading automaticity even though young and poor readers, who presumably lack reading automaticity, present strong interference.”

(Please see reference slide)

Statement of the Problem

- **The purpose of this experiment was to test if people can pronounce color words faster when the color word is different from the ink color, than if the color word is the same as the color ink. I became curious about this experiment because I wanted to know how fast we take to do mental thinking.**

Question/Problem

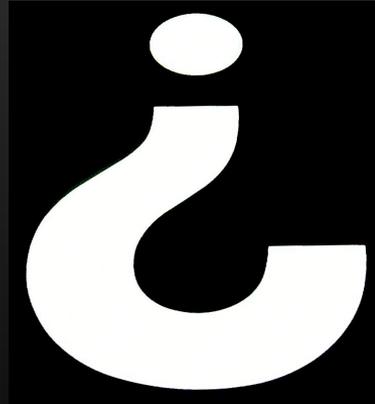
- **Do people pronounce color words faster when the color word is different from the ink color than when the color word is the same as the ink color ?**

Hypothesis/Prediction

- I hypothesize that people will be able to pronounce color words faster when the color word is the same as the color ink because research states that it's much faster processing the color word that is the same as the color ink than when it differs from the ink.

Variables

- Independent- The independent variable is changing the color of ink.
- Dependent- The dependent variable is measuring the accuracy depending on ink.
- Control- color and time



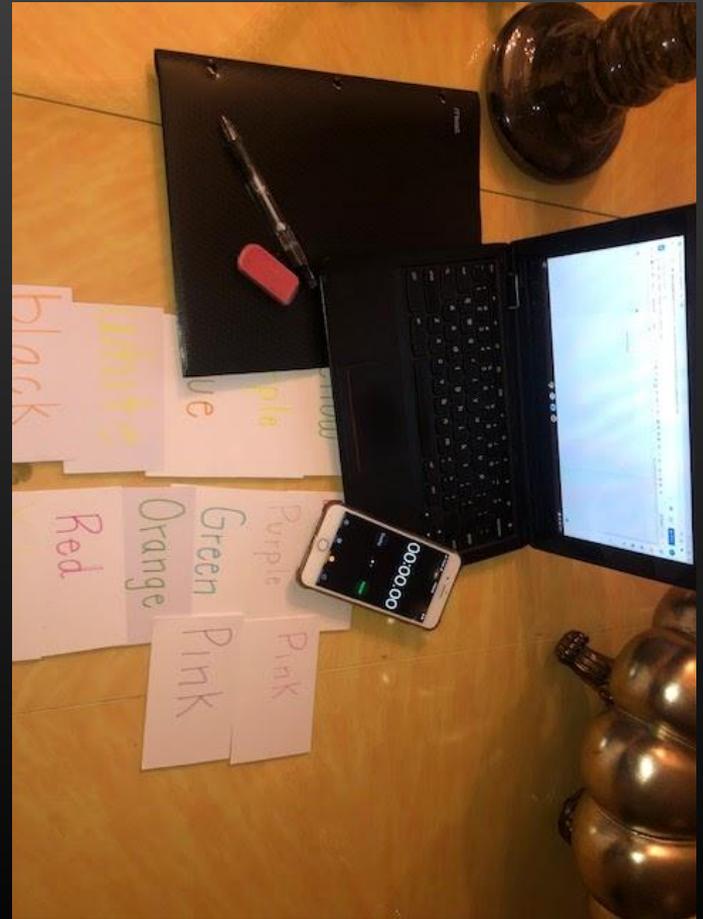
Materials

- 1 Computer with a color printer
- 1 pair scissors
- 15 Volunteers to take a simple color-naming test
- 1 MyChron™ Stopwatch or a phone timer
- Paper to record final time



MyChron™ Stopwatch

[NOT my picture]



Procedures

1. Go to google docs
2. Use one file page to insert 10 color words with matching color word [ink]
3. Use another file page to insert 10 color words with different color ink
4. Print pages
5. Cut out each word
6. Keep the two sets separate [one stack of same color word and ink, another stack with different words and ink]
7. Don't forget to get a line sheet of paper to collect all data
8. Now, Choose 15 adult volunteers
9. Select one volunteer and show them one card at a time. Have the volunteer call out the word on the card while continually cycling through the cards until they have called out all of the 10 color words with matching ink. Make sure to record the time it takes the volunteer to accomplish this task. Record your results.
10. Repeat step 9 with the cards that contain the color words with the non-matching ink and record your results.
11. Also, make sure to be collecting the time data on the line paper [On each volunteer]
12. Then, when your finished with your 15 volunteer, re-test them but with the 10 color words with different color ink]
13. Make sure to also collect time data in the line paper on each volunteer
14. Do the same procedure [that you use on on the 10 color words with matching ink]
15. Now, calculate the average data time of all volunteers they took on reading on each 10 word stack
16. Now, calculate the time *difference* for each volunteer (non-matching word of color and ink time minus the matching words of color and ink time).
17. Then calculate the average difference for the group of volunteers.
18. Make bar graphs to illustrate your results
19. Lastly, analyze your results.

Results and Data

Figure 1 shows the same word color and ink.

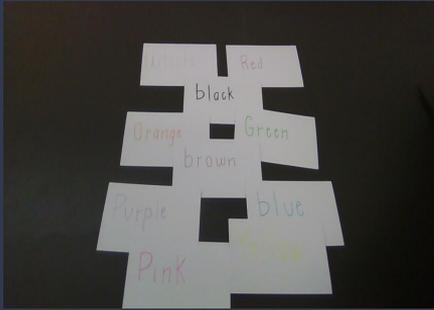


Figure 2 shows the different word color and ink.

This experiment produced results. They are as follows. The results for this experiment show that after averaging my 15 trials, the different color words and color ink average time that they took pronouncing was 12 seconds, and the same word color and ink average time showed that they took an average of 8 seconds pronouncing. Results show that 60.0% of my sample size was able to pronounce words faster when the word color is the same as the color ink.

Results: Data Table [Same Word and Color Ink]

Same word and ink color	
Trials:	Time(seconds):
Test subject #1	7
Test Subject #2	7
Test Subject #3	8
Test Subject #4	9
Test Subject #5	6
Test Subject #6	7
Test Subject #7	8
Test Subject #8	8
Test Subject #9	10
Test Subject #10	9
Test Subject #11	7
Test Subject #12	10
Test Subject #13	8
Test Subject #14	9
Test Subject #15	7
Total average: 8 seconds	

Results: Data Table [Different Word and Color Ink]

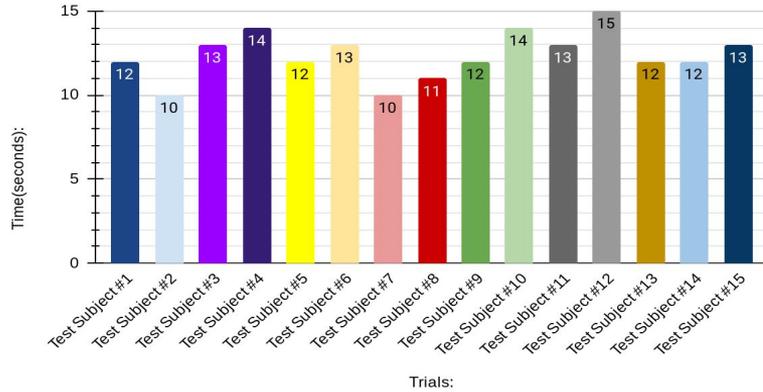
Different Word and Color Ink	
Trials:	Time[seconds] :
Test Subject #1	12
Test Subject #2	10
Test Subject #3	13
Test Subject #4	14
Test Subject #5	12
Test Subject #6	13
Test Subject #7	10

Test Subject #8	11
Test Subject #9	12
Test Subject #10	14
Test Subject #11	13
Test Subject #12	15
Test Subject #13	12
Test Subject #14	12
Test Subject #15	13
Total Average:	12 seconds

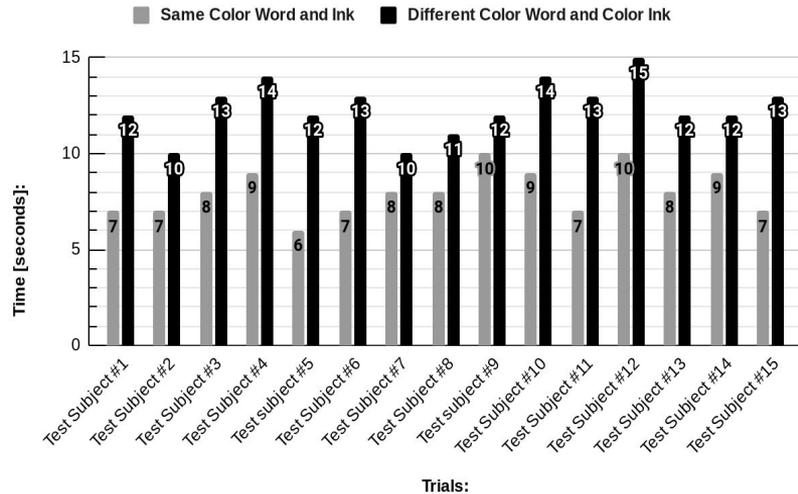
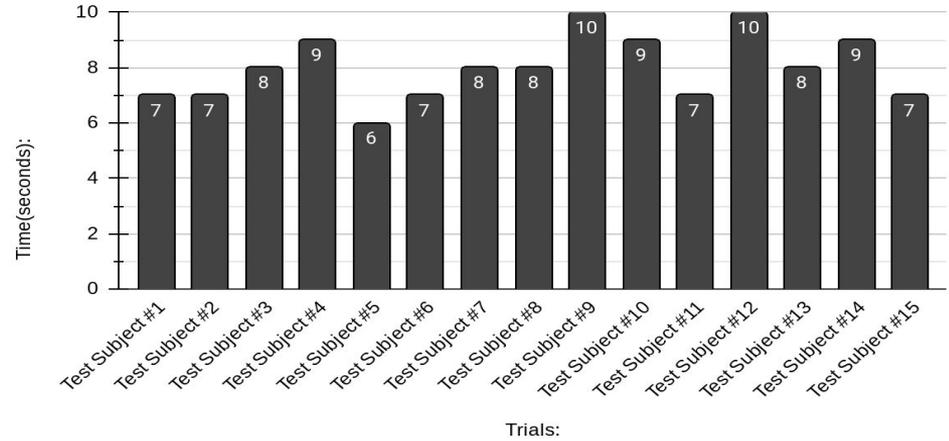
Same Color Words and Color Ink		Different Color Word and Ink	
Total average:	8 seconds	Total average:	12 seconds

Results: Data Graph

Different Color Words and Color Ink

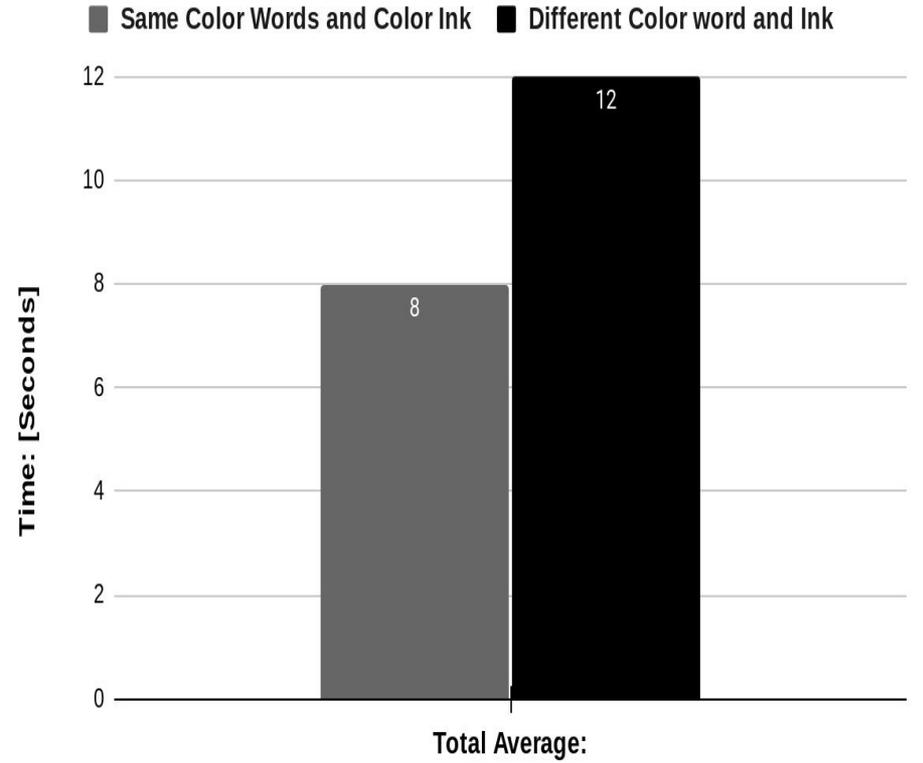
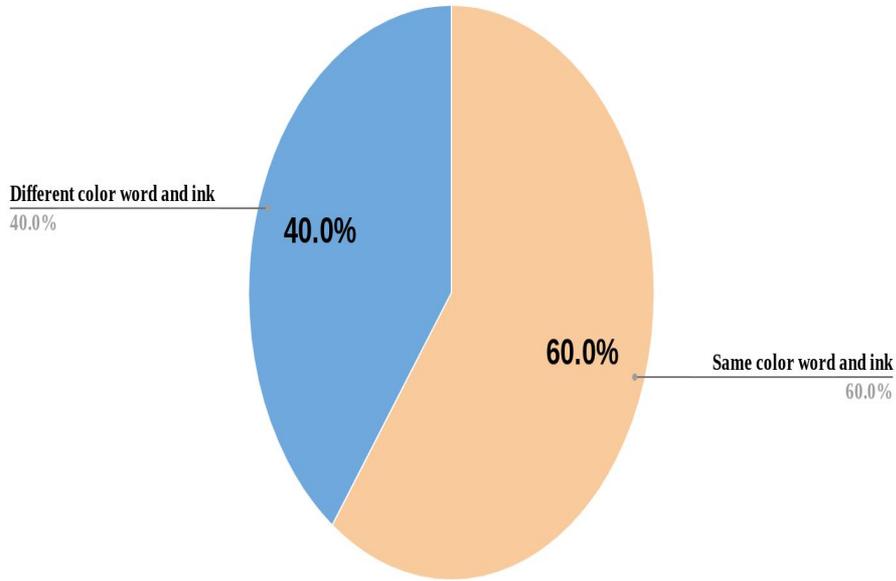


Same Word and Color Ink



Results: Data Graph

Total average



Conclusion

The results of this experiment showed that my hypothesis was supported. This experiment was successful because I timed results how it needed to be and I also timed each volunteer how it needed to be timed. In this experiment my results prove that it is faster to pronounce word color with the same color ink. If I were to do this project again I would take my sample size to the next level to have better valid data and I would also do 20 color words instead of 10 color words.



Implications and Ideas for Future Research...

1. In this experiment my objective is to test if people can pronounce color words faster when the color word is different from the ink color than when the color word is the same as the ink color. I accomplished my objective by testing 15 different volunteers to validate if they were able to read faster when the color word differs from the color ink than when the color word is the same as the color ink.

2. In this experiment I hypothesize that people will be able to pronounce color words faster when the color word is the same as the color ink because research states that it's much faster processing the color word that is the same as the color ink than when it differs from the ink...

My hypothesis was supported because I was able to verify with 60.0% that it was easier to pronounce words faster when the color word is similar to the color ink.

3. The results for this experiment show that after averaging my 15 trials, the different color words and color ink average time that they took pronouncing was 12 seconds, and the same word color and ink average time showed that they took an average of 8 seconds pronouncing. Results show that 60.0% of my sample size was able to pronounce words faster when the word color is the same as the color ink.

4. In this lab I was able to learn a new mental thinking experience challenge.

5. I was very interested in my experiment, so much so that if I were to repeat this experiment, I would make a bigger sample size to have better and maybe test girls vs boys.

References

<https://sfleducation.springeropen.com/articles/10.1186/s40862-020-00098-8#Sec7>

<https://journals.sagepub.com/doi/full/10.1177/2158244014525423>

<https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00557/full>