CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

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Project Number

J0711

Project Title

Strategic Stroop

Abstract

Objectives/Goals

Determine at what age group brain interference is least and most prominent when concentrating in a given task (e.g., saying color vs reading word).

Methods/Materials

Make the Stroop Test in Google Slides by making 20 slides showing color words in different font colors, one word per slide. In addition, make a Google Form that has 3 questions: what age group are you in, what is your gender, and your score (to be filled out by tester). Ask ~20 subjects (~10 per gender) from each of the age groups 5-9, 10-19, 20-29, 30-39, 40+, to take the test. During testing, pay attention to which slides the subject got a wrong answer, and calculate percent correct out of 20 questions. Enter the score in percent into that subject's Google Form and submit the form.

Results

A total of 108 subjects were tested, 47 females and 61 males. All of the age groups had 17-28 subjects. All age groups, except 5-9, obtained an average score in the Stroop Test between 89 and 96%. While the age group 20-29 scored an average of 96%, making it the highest scoring age group, the age group 5-9 scored an average of 60%, with high variability (10% being the lowest score and 100% being the highest). The age groups 10-19 through 40+ had very similar scores and 6-8% variability as an average. The data shows that these average scores are not dependent on gender. The Score Distribution per Age Group plot showed an interesting pattern. While 68 subjects scored 90-100 percent, 29 subjects got a score between 75 and 85 percent, and only 11 subjects got a score < or = 70%, mainly subjects in the 5-9 age group.

Conclusions/Discussion

Based on our experiment, our hypothesis was proven incorrect. We believed that the 10-19 age group would have done better in the Stroop Test because they have not been exposed to the reflexive action of reading as much as the older age groups and they are more competitive than the younger age group. We found out that although the score for the older age groups (10-40+) were similar (89-96%), the 20-29 age group did better (96%) than the 10-19 age group (90%). After further research, we found out that the brain reaches its full maturity by age 25. The results of each age group were similar between male and female subjects, leading us to believe that the scores were not dependent on the subject's gender.

Summary Statement

Our experiment tested in which age group brain interference was least prominent; results showed that the 20-29 age group had the least brain interference.

Help Received