CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

Alexandria C. Kinney

Project Number

36234

Project Title

Are You Too Old to Turn It Around and Flip Flop? A Study of Age and Ocular Agility

Abstract

Objectives/Goals

The purpose behind this experiment was twofold. The first objective was to determine whether reading print inverted text was a universal trait. Secondly, if so, is this trait affected by age. My hypothesis is that it is a universal trait however, the ability to do so decreases as age increases.

Methods/Materials

Two types of print inverted text were used for this project. The first was text that was inverted 180 degrees; the second was text written from right to left as opposed to the conventional left to right orientation. Four groups, with 5 subjects per group, were tested with different ages. The test subjects were made to read the two different paragraphs & the time it took for them to complete the reading was recorded. The data was collected in a table & analyzed using bar graphs.

Results

The bar graphs showed that reading both the print inverted & backward text took, on average, about the same time for the first three age groups. The only group that took a significantly harder time reading either text was the 51+ age group. An additional piece of information that was gathered from these plots was that for all 4 groups, reading the print inverted text proved more difficult when compared to the backwards texts. The data proved the proposed hypothesis to be only partially correct. It was proven that successfully reading inverted text was indeed a universal trait however the age dependency did not begin until after 51+ ages.

Conclusions/Discussion

In conclusion, the data shows that reading both print inverted text and backward text is a universal trait. However, there does appear to be a difference between age groups. Age groups 10‐16, 17‐30, 31‐ 50 all had about the same average time in reading both inverted and backward text. It is evident after analyzing the data that the inverted text was much more difficult of a test than reading the backwards text. Additionally, the data suggests that the 51+ age group took the longest time in completing the test. It is my reasoning that the 51+ age group took longer with both tests due to both declining health of the eye when compared to the other 3 age groups and decreased brain processes. The data is conclusive with the hypothesis that I set forth.

Summary Statement

I was able to conclude that ocular agility is a universal trait and is age dependent, but only after the age of 51.

Help Received

I designed the experiment on my own by deciding how many test subjects per age group I should have and what text the subjects should be tested on. My teacher, Salma Baig, mentored the project by reviewing my data set and analysis of the research to ensure it was being interpreted correctly. Lastly, I