CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
Donald H. Livingston

Project Number
J0616

Project Title
Visual Memory and Your Life: The Relation of Visual Memory to Drawing, Facial Recognition and Navigation Abilities

Abstract

Objectives/Goals
I have poor visual memory and wanted to understand the impact of this on my life. However, when I reviewed the existing research I learned that there is disagreement and lack of knowledge about how visual memory impacts life skills. The purpose of this project is to determine how visual memory is related to drawing, facial recognition and navigation abilities.

Methods/Materials
After researching the topic, three hypotheses were developed: 1. Three types of visual memory (spatial, long term and design copying) are highly related to drawing ability. 2. Three types of visual memory are moderately related to facial recognition ability. 3. Spatial Memory is highly related to navigation ability. Tests were created to measure the three identified types of visual memory as well as subjects# drawing ability and facial recognition skills. A survey was developed to measure navigation ability. 24 subjects aged 11 to 82 signed consent forms and were tested. There were 12 males and 12 females. Analysis was done to see how subjects# memory test results related to the skills test results and survey. Correlation coefficients were calculated to see where the connections were greatest.

Results
The analysis shows that: 1.Drawing ability is highly related to all three types of visual memory. 2. Facial recognition skills are highly related to design copying skills (short term memory), and moderately related to long term visual memory and spatial memory. 3. Navigation ability is highly related to spatial memory. The degree of relatedness was determined by comparing correlation coefficients to guidelines used for interpreting correlations in psychological research.

Conclusions/Discussion
People with visual memory deficits of any type will likely also have a hard time drawing realistically. People with poor spatial memory will likely also get lost easily, and people with poor short term visual memory will likely also have trouble recognizing faces. These findings should be confirmed by testing more subjects. Also, a test for navigation ability should be developed so that navigation skill measurement does not have to be done by a self-survey.

Summary Statement
This project investigates how visual memory is related to the skills of facial recognition, navigation ability and drawing ability.

Help Received
Dr.Steve Newton taught me about visual memory; My father showed me how to make the scatter graphs; My brother explained about correlation coefficients; My mother helped me keep test papers organized.