CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

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Project Number

S0403

Project Title

Learn to See: A Study of Visual Perception

Abstract

Objectives/Goals

Visual perception is a very important skill. It is especially crucial for school-aged children as it is needed to understand and decipher things, learn reading skills, copy text accurately, develop visual memory of things observed, develop hand-eye coordination, and to use vision with other senses to recognize different sounds. The purpose of this project was to see if training and practice could improve students' visual perception, whether this improvement was sustainable and how it effected students reading skill.

Methods/Materials

To meet the objective of the study, informed consent was obtained from 40 participating students. First the Motor Free Visual Perception Test 3 (MVPT-3) was administered to assess the students# baseline visual perceptual status. The participants were then randomly divided into two groups: the experimental group and the control group.Students from the experimental group practiced visual perceptual skills such as visual discrimination, visual memory, figure ground, visual closure, visual form constancy, saccades, and tracking and focusing skills. Both groups were allowed to play the SET card game. After four weeks, 2nd MVPT-3 test was administered to assess the visual perceptual scores of both groups. Without any further training or practice, 3rd MVPT-3 test was administered again after an additional four weeks. Both groups# MVPT-3 scores before and after the visual perceptual skills training and practice were compared.

Results

Results demonstrated a significant improvement in the visual perceptual test scores of students in the experimental group (with a p-value 0.00001, t stat. 7.13, 95% CI 7.66-14.04,df 19)who received training and practice on specific visual perceptual skills. In addition, both groups showed that the achieved improvement in visual perception could last for at least four weeks without any further practice. Comparison of the reading comprehension scores of both groups showed that experimental group made significant improvement(p- value .02,t stat2.57, 95% CI 4.6-19.07)in their reading scores when compared to the control group.

Conclusions/Discussion

Findings from the study indicate that visual perceptual skills, a very important learning aide for school children, can be enhanced with proper training and practice and that this improvement is retainable.Improved visual processing skills can eventually help students to excel in their academics.

Summary Statement

Visual perceptual skills can be enhanced with proper training and practice and this achievement can be maintained.

Help Received

Science teacher and mother.