California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)

Dana J Levine

Science Fair Use Only

J0218

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

Is it Possible to Develop a Visual Test to Determine Thinking Style?

Division

X **Junior (6-8)** _ **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)

2 - Behavioral Sciences

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: This experiment was done in order to ascertain whether or not it is possible to determine a person's thinking style by their visual processing.

Methods: Based on the general characterizations of the brain's hemispheres, I developed a learning & thinking style test (later named Dana Levine's Thinking Style Test). It was composed of 12 pictures painted by Arcimboldo. Each of these pictures was a face made up of smaller objects. The big picture is the face of a person, but if one looks closely, one will see that it is made up of smaller objects such as fruits. The control for this experiment was Dr. T. Roger Taylor's Test (Your Style of Thinking and Learning), a multiple-choice test. Each subject (age 11-12) took the test and their scores were calculated to determine brain-dominance.

Determining a person's style of thinking was done by flashing Arcimboldo's pictures on a white board, one at a time, each for 2 seconds. Group A would have a 10-second interval between pictures; while Group B would have 15-second intervals. The people being tested would be asked to write down what they had seen for each picture. Using their responses, I would be able to create an efficient way to calculate one's brain dominance.

Results: It was found that, on average, the subjects in Group A had correlations between Dana Levine's Thinking Style Test and Dr. T. Roger Taylor's Test, while Group B's subjects did not. The responses in Group A were more accurate because the subjects had less time to fully analyze the pictures with their entire brain. Their responses reflected what they were truly thinking when they first saw the picture.

About 50% of the subjects did have correlations between the tests. Therefore, Dana Levine's Thinking Style Test is not consistently accurate when compared with Dr. T. Roger Taylor's Test.

Discussion: The left hemisphere and the right hemisphere of the brain are responsible for different things. The right hemisphere deals with creative aspects like musical abilities & visual thinking. It's responsible for seeing the whole picture as opposed to the details that make it up. The left hemisphere is in charge of looking at the details & is more involved with activities such as math &

Summary Statement (In one sentence, state what your project is about.)

In order to determine one's style of thinking and learning, I developed a visual test to complement a written test.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Used projection equipment and computers at my school under the supervision of Mrs. Armour