



Project ID: 511
Junior Division
Behavioral and Social Sciences

Meira Adatto
San Diego Hebrew Day School
Gr. 8



The Effect of Videos on Kids

AWARDS:

San Diego Psychological Association - Junior Division 3rd Place

Do videos have an effect on kids? It was hypothesized that if children were shown a video saying not to steal, they wouldn't steal. But if they were shown a random video, then they would steal. In the conducted experiment, participants watched a video and answered three questions while the tester left the room for a few minutes. They were told not to worry about the candy bowl next to them and the garbage can with wrappers of the candy. The tester left the room and came back two minutes later. After that, the participant left. Then the tester weighed the bowl of candy to see whether or not the participant stole.

We are unable to draw solid conclusions due to the fact that very few participants stole overall. 8 participants out of 78 participants(9.75%) total tested stole. While the results didn't show any differences for the portion of who stole for the different videos, when comparing the other characteristics of the participants, it was shown that boys that were 7-10 stole 4 times(18.18%), but boys that were 11-13 stole 0 times(0%). It also showed that girls that were 7-10 stole 0 times(0%), but girls that were 11-13 stole 4 times(22.22%). Although the videos didn't make an overall difference, there was a difference in the age and gender portion.



Project ID: 512
Junior Division
Behavioral and Social Sciences

Sadie Altman
San Diego Hebrew Day School
Gr. 8



Change of Personality Type

AWARDS:

San Diego Psychological Association - Junior Division Honorable Mention

When this project first began, the problem was whether the personality type of a person changes when their musical environment is different. Perhaps, if the music environment is changed then possibly a person's personality type may change as well because music releases dopamine causing different emotional answers when doing the Myers Briggs Test. Half of the participants were tested with calm music and intense with the other. All groups were tested without any music and the order the tests were given was varied. While listening to such music, they took the Myers Briggs Personality Type Test. In the end, there were a total of 50 people tested twice. When looking at the individual personality traits, there were basically no changes between the two groups of music.

The final results were that when subjects listened to calm music during test taking, there were almost ten percent more identical results than the intense music. An individual personality trait changed 29 times for calm music and 26 times for intense music, there were 55 switches in total. Therefore, the participants that listened to intense music while taking the test had their results change more than the calm music groups.



Project ID: 513
Junior Division
Behavioral and Social Sciences

Princess-Hafsah Aly Saad Aly
Bright Horizon Academy
Gr. 7



Does Typing or Writing Notes Really Make a Difference?

AWARDS:

Association for Women in Science - Winner

San Diego Psychological Association - Junior Division 2nd Place

The objective of this project is to investigate the impact of note-taking methods on students' retention of lesson material. It was hypothesized that writing notes by hand is more efficient for retaining information, considering its prevalence as the recommended method by teachers. Sixty-two middle school students, aged 10-13, were randomly assigned to two groups: typing and handwriting. The students were grouped based on their grade level in the same room. In the experiment, participants read a science passage and took notes either by typing or handwriting. Afterward, they completed a comprehension quiz. The experiment was repeated the following week with the note-taking methods reversed. Results showed that when the students typed their notes, they achieved an accuracy rate of 65.71%, while when they wrote notes by hand, they scored 56.00%. Despite the traditional preference for handwritten notes by teachers, typing notes proved to be more effective for learning. These findings underline the importance of embracing modern note-taking methods to enhance educational outcomes.

Did Not
Attend
Judging

Project ID: 514
Junior Division
Behavioral and Social Sciences

Jude Delapp
Nazareth School
Gr. 7

Does Different Font Styles Affect Reading Comprehension?

This project examined if different font styles affected reading comprehension. It is hypothesized that, yes, font style does affect reading comprehension, specifically Arial, PT Serif and Garamond will score lower than the control, Times New Roman. I began the testing on January 9th and finished the testing on January 11th. I tested the entire middle school (6th, 7th and 8th grade), which is 77 students who participated in this project.

Results indicated that the initial hypothesis was not supported. Arial (Test B) scored better on every question except question 3 on the Times New Roman tests. Garamond (Test D) scored lower on questions 1 and 3 than Times New Roman, however, the two fonts scored equally on question 5. PT Serif's test (Test C) out-scored Times New Roman (Test A) on every question except question 5. The means for each of the tests are 12 correct answers for Times New Roman (Test A), 12.8 questions answered correctly for Arial (Test B), 12.6 questions answered correctly for PT Serif (Test C) and 11.8 questions answered correctly for Garamond (Test D). Font style Arial (Test B) scored higher than any other test with 12.8 questions. If I were to restart this project, I would have tested more classes such as 5th or 4th grade. I would ask participants to try their best and to try to answer the questions to the best of their ability. This would have led to more accurate test scores.



Project ID: 515
Junior Division
Behavioral and Social Sciences

Elie Eilemberg
San Diego Hebrew Day School
Gr. 8



Can the Placebo Effect Change Your Reaction Time?

Can the placebo effect change reaction time? It was hypothesized that if there were two groups that were told that their reaction time would be slower or faster, depending on the group, after taking a placebo, then it would change according to what they were told. Using a computer, the subject was tested three times on a reaction time test. This was done to all subjects. After the first three trials, the subject was given a placebo drink and was told it would make them faster or slower. This was told to them depending on what group they were in. After they drank the placebo, they waited and took the test another three times. All results were recorded on a data table.

The groups reacted according to what they were told and the placebo effect worked. Results showed that subjects performed faster when told their reaction time would be quicker and slightly slower when told it would be slower. The control group, before the placebo, got an average of 365.9 milliseconds. The faster group got an average of 347 milliseconds. The slower group got an average of 367.5 milliseconds. The hypothesis was supported. Subjects told their reaction time would be faster were more affected than those told it would be slower, possibly because of the believability of the information. The difference between faster and control subjects might be greater because individuals tend to want a faster reaction when told they will.



Project ID: 516
Junior Division
Behavioral and Social Sciences

Reem Essa
Bright Horizon Academy
Gr. 7



Visual and Auditory Reaction Times in Relation to Preferred Learning Styles

The objective of this project is to explore the correlation among middle school students' preferred learning styles, reaction times, and gaming habits. It seeks to investigate whether there exists a relationship between preferred learning styles (visual, auditory, kinesthetic) and reaction times, as well as to explore how individuals' learning style preferences influence their gaming habits. I hypothesized that individuals who prefer visual learning styles will show the fastest reaction times and will also spend the most time gaming.

Volunteers took tests to find their preferred way of learning and completed 5 reaction time tests in a quiet place. They played educational games at home and recorded how long they played each day. The results showed that those who preferred kinesthetic learning styles reacted the fastest and played games the most. Those who preferred auditory learning styles reacted the slowest and played games the least, while those who preferred visual learning styles were in the middle. This shows that how students prefer to learn influences their gaming habits.

The data highlights correlations between learning styles and reaction times, with kinesthetic learners showing a 10% faster reaction time compared to visual learners, while visual learners are 3.3% faster than auditory learners.

In conclusion, the project findings show correlations among learning styles, gaming habits, and reaction times. Kinesthetic learners demonstrate the quickest reactions, followed by visual learners and then auditory learners. Considering gaming habits alongside learning styles provides a clearer picture of cognitive processes. This emphasizes the need to customize educational strategies and gaming experiences to match diverse preferences, which can improve engagement and learning outcomes for all learners



Project ID: 517
Junior Division
Behavioral and Social Sciences

Alexandre Francy
St. Gregory the Great Catholic School
Gr. 7



Delayed Gratification and Academic Performance

Delayed Gratification is an essential part of life, whether it is related to work, activities, or school. What the researcher did was an experiment on how your delayed gratification could affect your STAR exam results, if you were to fail you would ideally have a lower score on the exam. Why I did it was because I wanted to see and learn how your patience had any effect on your school work. It is hypothesized that the higher someone's academic performance the longer someone can delay gratification. Some of the materials the researcher used were; 50 human consent forms, 1 table, 1 chair, Access to a room, Variety of candy. The researcher's procedure was to print a human release form for 50 test subjects spanning grades k-8. Inform test subjects of the experiment and then test individually by placing a small amount of candy in front of them and leaving them unobserved for 10 minutes. The researcher rewarded completion of the experiment. The researcher also recorded and analyzed results as compared to test scores The researcher's results showed that there is a positive correlation between delayed gratification and academic performance.



Project ID: 518
Junior Division
Behavioral and Social Sciences

Emma Mansur
San Diego Hebrew Day School
Gr. 8



Can People Tell Real Smell Over Artificial Smell? And Does Peppermint Help or Hurt Your Sense of Smell?

This project was about whether smelling real peppermint helps or hurts the sense of smell when trying to identify other scents. Can people tell whether they are smelling something real or artificial? The project gathered data from 50 subjects. Each subject was tested twice. When half the subjects were tested, they were given real peppermint and then received artificial gel scents. The second time they were tested they received no peppermint, only the artificial gel scents. The other half of the subjects at first received artificial peppermint followed by the artificial gel scents. The second time they got tested they received no artificial peppermint and only received the artificial gel scents. The order of testing was varied. The purpose of doing this twice was to see if smelling the peppermint first helped the testers differentiate between the artificial scents.

The results showed that peppermint had no effect on the brain in figuring out the correct scent source identification but, real peppermint affected the brain in identifying the correct scent source. The graphs prove that those who smelled real peppermint and no peppermint had a 9% higher scent identification compared to the ones who smelled artificial peppermint. Those who smelled the real peppermint were able to identify whether the scent was real or artificial nearly 10% more often than those who smelled artificial peppermint and over 10% more than those with no peppermint.



Project ID: 519
Junior Division
Behavioral and Social Sciences

Andrea Martinez
Nazareth School
Gr. 7



Can People Tell the Difference Between Natural and Artificial Scents?

AWARDS:

San Diego Psychological Association - Junior Division Honorable Mention

I chose this project because I love scents. Through it, I tried to determine whether people can tell the difference between natural and artificial scents. My hypothesis is people ages 14 to 16 will be able to do so.

This project required using 7 glass bottles, and 6 essential oils: three natural and artificial essential oils. Except for one bottle, the control, each bottle was filled with a different oil and labeled to identify each of the oils in each bottle. The labels did not disclose the identity of the oils to the test subjects. Gloves were always worn. Each bottle was held 125 mm below the test subject's nose. The test subjects were asked whether the scent is natural, artificial, or empty. Each test subject was timed to respond. The collected data was transferred to a data graph.

Thirty-three students were tested, eleven in each of the following grades: Sixth Grade (ages 10-12), Seventh Grade (ages 12-14), and Eighth Grade (ages 14-16). They were tested on three natural and artificial scents: peppermint, lavender, and lemongrass.

Eighth Grade had the most students (nineteen) who were able to detect the difference between natural and artificial scents. And Seventh Grade had the least students (thirteen) who were able to the difference between natural and artificial scents.

The most distinguishable scent was lemongrass - eighteen students. The least distinguishable scent was lavender - thirteen students.

All thirty-three students correctly responded to the control test. Therefore, people can tell the difference between natural and artificial scents.



Project ID: 520
Junior Division
Behavioral and Social Sciences

Angelina Parker
Mt. Helix Academy
Gr. 7



Comparing Different Reaction Times for Different Visuals

My project was on comparing different reaction times for different visuals. The purpose of this project was to research response times. For my project, I wanted to learn what type of visual patterns have quicker reaction times. I had hypothesized that less complex patterns will be recognized faster than more complex patterns.

For my experiment, I had designed 4 different tests, Test 1 consisted of a group of "@" symbols and the different symbol being an "O". Test 2 consisted of a group of the capital letter "T" and the difference being a "K". Test 3 consisted of a lesser than or equal to symbol " \leq " and the difference was the same symbol flipped the other way " \geq ". Test 4 consisted of a group of the capital letter "A" and the difference was the capital letter "D". I had thirty subjects, doing all four of these tests, while I timed them.

Based on my results, my hypothesis was proven to be correct. I had learned test three was the hardest test having an average of 14.63 seconds. The second longest reaction time was test 1 having an average of 2.53 seconds. I had found they both consisted of a group of symbols proving that more complex symbols have longer reaction times.

If I were to do this project again, I would add in further distractions. For example, I might play music or make certain noises in the background. Another thing I might do is give them candy before they do the experiment to see if it affects the subject's reaction times.



Project ID: 521
Junior Division
Behavioral and Social Sciences

Josephina Perham
The Children's School
Gr. 8



Do Women Put Themselves, Animals, or Price First When Purchasing Cosmetics?

My project is to determine whether women put the price, themselves, or animals first when buying cosmetics. I hypothesized that if women are given a choice between a cheap, clean, or cruelty-free product, then they will pick the cruelty-free one. The steps in this project were to collect women participants, make a survey asking which product they would buy by choosing between various price options, cruelty-free, and clean products, and finally send it out to the participants. My results showed that 90.4% of participants would spend a "luxury" amount of money on a cruelty-free product. My results also showed that 94.2% would spend a "luxury" amount of money on a clean product. This showed that women in my survey valued themselves and animals over the price of a product. My survey also showed that 75% of women would rather buy a cruelty-free product than a clean one. This proved my hypothesis correct because most women picked both luxury and cruelty-free products over the clean and economical ones. Overall, my data showed that women put animals before price and themselves when buying a product.



Project ID: 522
Junior Division
Behavioral and Social Sciences

Maryam Purmul
Bright Horizon Academy
Gr. 8



Investigating Teachers' Ability to Distinguish Human and AI-Generated Writing

AWARDS:

Association for Women in Science - Winner

San Diego Psychological Association - Junior Division 1st Place

CSEF Qualified

The objective of this project is to assess the accuracy of AI detectors and teachers in identifying AI-generated content within passages. It was hypothesized that teachers would outperform AI detectors in this task, and human-written passages would be more easily distinguishable than AI-generated ones.

Ten human-generated and ten AI-generated passages were examined. Teachers achieved a 58.00% accuracy rate for human-generated passages, compared to 39.00% for AI-generated ones. Among AI detectors, accuracy rates varied: AI Detector 1 achieved 51.89%, AI Detector 2 achieved 66.28%, and AI Detector 3 achieved 54.84% for AI-generated passages. Conversely, for human-generated passages, AI Detector 1 achieved 90.58%, AI Detector 2 achieved 61.83%, and AI Detector 3 achieved 93.29% accuracy.

In conclusion, the comparison between teachers' predictions and AI detectors' performance in accurately identifying AI content within passages highlights significant differences. Teachers achieved a higher accuracy rate of 58.00% for human-generated passages compared to 39.00% for AI-generated ones. Among AI detectors, for AI-generated passages, AI Detector 1 achieved 51.89% accuracy, AI Detector 2 achieved 66.28%, and AI Detector 3 achieved 54.84%. Conversely, for human-generated passages, AI Detector 1 achieved 90.58% accuracy, AI Detector 2 achieved 61.83%, and AI Detector 3 achieved 93.29%. These findings underscore the need for ongoing enhancements in AI detection technology to improve accuracy across different types of passages.



Project ID: 523
Junior Division
Behavioral and Social Sciences

Jake Sarles
The Rhoades School
Gr. 7



Art Challenge: Can You Identify Which Artworks Are AI Generated?

AWARDS:

CSEF Qualified

Thermo Fisher Scientific Junior Innovators Challenge Nominee

Creating art is a popular job or hobby for many people. My mother has a TikTok channel about art. Recently AI generated art has become more advanced and may someday replace artwork created by human artists. I experimented to see if students in grades five, six, seven and eight could correctly identify art created by human artists versus AI generated artwork. I also tried to determine if the middle school students had a preferential bias towards artwork created by human artists.

A total of 104 students participated in this survey. The students tried to identify AI generated artwork versus artwork created by human artists. The test subjects were given a response form and viewed 10 color images, five AI generated and five created by human artists, that were presented in randomized order.

The results showed that the students were only able to correctly identify the AI generated images on average 37.37% of the time. Art pieces actually drawn by human artists were selected as the preferred drawings by the middle school students 58.15% of the time. Interestingly, the students chose the drawings they believed were made by a human artists as their preferences 63.82% of the time.

The results supported my hypothesis since it was difficult for the students to distinguish between the AI generated artwork and images created by human artists. The students also exhibited a bias towards artwork they believed was created by human artists. More tests should be performed to confirm the results.



Project ID: 524
Junior Division
Behavioral and Social Sciences

Bella Schere
The Children's School
Gr. 8



Does the Use of Motivational Interviewing Affect Student Effort?

AWARDS:

Grand Award – Junior Division Life Sciences

Association for Women in Science - Winner

San Diego Psychological Association - Junior Division 1st Place

CSEF Qualified

Thermo Fisher Scientific Junior Innovators Challenge Nominee

This experiment looks at factors that help students enjoy and perform better at school. Specifically, I looked at the impact that different "teaching styles" had on students' reported interest, effort, and final product during a class assignment. My hypothesis is that if teachers included an "eliciting/empathy" Motivational Interview (MI) discussion after describing an assignment, then it would result in increased interest/effort from students compared to students receiving a "directive" explanation. This experiment is important because many traditional teaching styles do not include effective strategies for motivating students. MI is a technique that increases motivation by drawing from an individual's own values and desire to work harder and learn.

For my project, students participated in a teacher led MI discussion or a directive discussion. Before the class started, the teacher explained the activity the students would be doing, and the students rated themselves on interest, excitement, and expected outcome. The teacher then spoke with the class using MI or directive styles of teaching and began the activity. Following the activity, students filled out the self-grading sheet again. The results showed that in most cases, MI was the more effective teaching style. On average, the MI group test scores increased with the averages change at 0.4, 0.1, and 1.1. The data trend showed its effect increased with the student's age. Overall, a teacher's use of MI, has a positive effect on student success.

Did Not
Attend
Judging

Project ID: 525
Junior Division
Behavioral and Social Sciences

Evan Greene
Stella Maris Academy
Gr. 8

Esteban Snideman
Stella Maris Academy
Gr. 8

Do You Remember More by Writing or Typing,?

We intend to investigate humans' memory of writing and typing by testing 30 humans on their memory of writing and typing. We will test each human one time by making them write a few sentences on paper and then remove the paper from their view for five minutes. The human will then be asked to say as many words as possible from the paper they wrote on. This process will be repeated for the typing portion of the experiment but on a laptop instead of paper. We investigated this question because we wanted to maximize learning efficiency in the classroom. After testing, we found that students remembered 8.8 (average) words by writing, and students remembered 7.36 (average) words by typing.