CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Alexandra A. Baeckler

Project Number
J0401

Project Title
The Effects of Given Names on a Shelter Animal's Adoptability

Abstract

Objectives/Goals
The goal of my project was to test the adoptability of animals based on their assigned name.

Methods/Materials
I have talked to many shelter officials to see what kinds of names they are using in their shelters as well as reviewed their online adoption sites. Names given to animals typically fall in one of these 5 categories - food, human, characters, silly, and negative connotation. I made a survey consisting of 9 animals, each with five name options. For each animal, one name represented each category of name. Survey respondents were asked to pick which names made them most and least likely to adopt the animal. To eliminate the bias due to what the animal looked like, and how well the names fit that animal, I made five variations of the survey, each with the same names sets in front of different animals.

Results
Results show that food names are the best for animal adoption followed by human names. On the other hand, results showed that 40% of the time, the 136 respondents decided what made them least likely to adopt, the name was a silly name. They would rather have a dog named Crusher than Curly Que. When given the choice, 29% participants selected Hurricane as the name they were least likely to adopt, where 47% were least likely to adopt Fancypants. The participants were about 7 times more likely to adopt an animal with a human or food name than one with a silly name.

Conclusions/Discussion
My research demonstrates that silly names are detrimental to an animal's adoption, contrary to most shelter official's beliefs. In the future, this data could help shelter animals get adopted more easily, simply based on what naming convention is used.

Summary Statement
I showed that certain types of names can have a positive or negative effect on a shelter animal's adoptability.

Help Received
My mentor, Kristen Morgensen, gave me advise on how to improve the setup of my survey for better results.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Catherine P. Biehl

Project Number
J0402

Project Title
How Do Cell Phone Conversations Affect Reaction Time?

Abstract

Objectives/Goals
The objective of my project was to determine how cell phone conversations affect one#s reaction time. I will be doing this by testing hands-on cell phone conversations, and hands-free cell phone conversations to see how each type will affect reaction time.

Methods/Materials
My data was obtained by 15 people with various ages and genders. I used the ruler method to test the subject#s reaction time, but I used a yardstick instead of a ruler. The control group is the subject#s reaction time without distraction (without being involved in any cell phone conversation). Part 2 (hands-on conversation) was tested by having my assistant go into another room to ask questions to the subject on the phone while the same procedure was happening. Part 3 (hands-off conversation) was tested the same way as part 2 but with the phone on speaker phone.

Results
The data proved that when involved in a hands-on cell phone conversation, reaction time increases. When involved in a hands-free cell phone conversation, reaction time increases as well, but not as long of a difference as a hands-on conversation.

Conclusions/Discussion
The results proved that it is in fact more dangerous to be involved in any type of cell phone conversation while driving, then when completely focused on the road. The overall experiment suggests that talking on the phone while driving should be illegal, because it increases the driver#s reaction time and it makes the task a lot more dangerous.

Summary Statement
Measuring human reaction times showed that individuals involved in a hands-on cell phone conversation have slower reaction times.

Help Received
None

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Sean Cai

Project Number
J0403

Project Title
Using Linguistic Cues for the Automatic Recognition of Personality

Abstract

Objectives/Goals
The objectives of this experiment are to explore the effect of ethnicity and gender on personality, find the approximate personality ratio between traits in society, and test the accuracy of personality questionnaires with correlation graphs today.

Methods/Materials
75 questionnaire sheets with three questionnaires each to be filled out by 75 students, first questionnaire was the Eysenck Personality Inventory attained from online. The second questionnaire, the Newcastle Personality Assessor. The third questionnaire, a data-mining software created by Mairesse, Walker, Mehl, and Moore to be used publicly.

Results
Ethnic and gender variation had a huge impact on personality, with clearly defined barriers. Correlation between the three questionnaires tended to be minimal, with correlation scores concerning questionnaire three to be extremely low. The ratio of personality traits to their counterparts was found to be 50-50 percent for extroversion and neuroticism, but ranked extremely high for the personality traits of conscientiousness, agreeableness, and openness to experience.

Conclusions/Discussion
The fact that correlation between the three questionnaires was minimal suggests that the respective questionnaires created for personality don't all have the same standards of assessment of personality, meaning that work in paralinguistics today is disorganized. Ethnic and gender variations in personality were found, implying the prevalent effect of culture and gender identity. The ratios of the personality traits that were not 50-50 percent signified the emphasis of those traits in society, overall exploring the diverse world's impact on personality.

Summary Statement
I found the major effects of ethnicity and gender on personality, effectively comparing those results to the ratio of the personality trait's counterparts in society as well as confirming the accuracy of today's personality questionnaires.

Help Received
Professor Zhu of USD provided intellectual knowledge and procedural advice on the project topic.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Sierra L. Courchesne

Project Number
J0404

Project Title
Empathy and Social Perception: Gender Based or Not?

Abstract

Objectives/Goals
Differences between how females and males perceive social signals about feelings, intentions and motives of those around them and experience and display empathy for others is a topic of major social importance, especially in middle and high schools. It remains controversial and unclear whether better social perception and empathy are affected by gender or other contributing factors. The goal of this study was to determine whether in young preteens and teens these social abilities are affected by gender, other factors or both.

Methods/Materials
Twenty-one 11-16 year olds were tested for social perception and empathy abilities. Each received 4 tests: Pre-Reading the Mind in the Eyes Questionnaire (self-rating of social perception); Reading the Mind in the Eyes (an objective, validated test of social perception by Baron-Cohen); Experimenter-Created Questionnaire (self-rating about daily activities created by S. Courchesne); and Zoll & Enz Empathy Questionnaire (available online). Through these tests, gender differences and non-gender-related findings were measured, analyzed and discovered.

Results
Females rated themselves as highly empathetic compared to males, consistent with the popular belief that females have superior social perception and empathy. However, self-rated empathy scores in females did not correspond with their scores on the objective Reading the Mind in Eyes test. Also, females and males had similar social perception scores on the objective Reading the Mind test (25.7 vs 25.0, respectively, out of 36). A higher objective score on Reading the Mind was found in those who value friendship and spend their free time interacting in social situations, regardless of gender. Across genders, the amount of electronic time one spends daily had no effect on social perception abilities.

Conclusions/Discussion
Results supported my hypothesis that large amounts of social interaction time may increase a person's social perception abilities, regardless of gender. However, the hypothesis that females would score higher on both empathy and social perception tests proved to be only partly verified; females did score higher than males on a self-rating empathy questionnaire, but about the same as males on an objective test of social perception. Overall, social perception abilities of males and females appear to be more related to time spent socially interacting with others rather than to gender alone.

Summary Statement
This experiment determines if higher empathy and social perception levels are due to gender or other contributing factors.

Help Received
I designed the experiment and one of the four tests within it myself and executed the study on my own. I looked up how to use statistical analyses on my data, got additional advice from my science instructor on statistical tests and then did them myself. My science teacher and parents gave feedback to improve my

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Isaac De Lara

Project Number
J0405

Project Title
TV Madness

Abstract

Objectives/Goals
The purpose of this project was to find out if violent cartoons affect the way people think.

Methods/Materials
The subjects were shown either a violent cartoon or nonviolent cartoon. They were then given a survey to measure their beliefs regarding aggression and violence. After the survey, they were shown five different images. Each image was ambiguous, where there were two different things that people could see. One of the things in each image was good and one was bad. For example, the words good and evil were in the same image. The subjects were asked what they saw first.

Results
The results showed that the violent cartoon and the nonviolent cartoon barely affected the subjects. The survey showed less than one point difference between the people who watched the nonviolent and violent cartoon, and the images had less than a 2% margin.

Conclusions/Discussion
The results suggest that the mind is not affected by violent cartoons. The hypothesis that said people who saw a violent cartoon would be desensitized and see scenarios as less violent was not supported. The hypothesis that stated that they would identify the violent words in the picture more often was supported. The results may have turned out this way because watching only 2 minutes and 16 seconds of a cartoon doesn't affect the way people think. It is possible that the cartoon was not violent enough and it appears that the nonviolent images were easier to identify which probably affected the results.

Summary Statement
I found that children's aggressiveness and empathy were not affected by watching violent cartoons.

Help Received
My teachers, Mr. Bessler and Ms. Rivard, supported me throughout my project. Dr. Haim Belzer helped me get background information and tips for my project.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Alexa R. Duran

Project Number
J0406

Project Title
Identifying Emotions: Investigating if People Can Determine Someone's Emotional State from Facial Expressions

Abstract

Objectives/Goals
The objective of this study is to determine whether humans can accurately identify other's happy or sad emotions purely through facial expressions.

Methods/Materials
Camera, 10 original test subjects, 20 test subjects, pencils, pictures of people/objects/animals, Ipad/Computer and survey. Took pictures of 10 subjects expressing emotions and showed those pictures to 20 subjects responding to a survey.

Results
Subjects identified the emotion they believed was being expressed from viewing pictures of people by marking responses on a written survey. Most subjects were able to accurately identify happy emotions but sad emotions were more difficult to identify.

Conclusions/Discussion
Survey results indicated a difference among the accuracy rate of identifying happy, sad and other emotions. Suggesting that facial expressions may be insufficient to identify sad and other emotions. It is concluded that happy facial expressions can be identified more accurately but sad facial expressions are more difficult to identify due to sharing facial characteristics with various emotions.

Summary Statement
I found that happy emotions were accurately identified by viewing pictures of facial expressions while sad emotions were misidentified and confused with other emotions.

Help Received
Mr. Gong the Science Fair Coordinator helped me design my project. Mrs. Wright my science teacher helped me coordinate my subjects and secure the human subject release forms. I conducted the experiment myself.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Sophia X. Epley

Project Number
J0407

Project Title
Race, Socioeconomic Status, and 5th Grade Students' Attitudes toward Police Officers, Doctors, Firefighters and Teachers

Abstract

Objectives/Goals
My objective was to determine whether fifth grade students, regardless of socioeconomic status and racial/ethnic backgrounds will have uniformly positive opinions of the likeability and trustworthiness of teachers, doctors and firefighters, but whether those from low socioeconomic status schools will have more negative opinions of law enforcement officers than those from high socioeconomic status schools and whether those from non-White backgrounds will have more negative opinions of police officers than White students.

Methods/Materials
Questionnaires as to perception of police officers, teachers, doctors and firefighters. 367 fifth grade students from six public elementary schools (of diverse socioeconomic status) in San Diego County.

Results
Students who identified themselves as being solely or partially a member of a racial/ethnic minority group had a more negative perception of police officers than of doctors and firefighters than those students who identified as solely being White. They also had more negative feelings towards teachers. The average scores for racial/ethnic minorities as to the likeability and trustworthiness of police officers and teachers were consistently lower than the average scores of White students across all six schools as well as in each individual school. Minority students scored the likeability and trustworthiness of doctors and firefighters higher than White students, demonstrating an even larger difference between minority and White children#s perceptions of police officers compared to other helping professions. Similarly, students from the low socioeconomic status schools scored police officers on average lower than those from the high socioeconomic status schools and scored teachers lower and doctors and firefighters higher than their high socioeconomic status counterparts.

Conclusions/Discussion
With continuing discussions in our country about the relationship between law enforcement officers and minority communities, these findings suggest that efforts to improve those relations should be directed at even very young children. Young children do not harbor uniformly naïve and benign perceptions of helping professions but develop attitudes toward police officers, teachers, firefighters and doctors that are affected by their race/ethnicity and socioeconomic status; these novel findings have significant implications for important public policy issues.

Summary Statement
Testing of 367 fifth graders from six schools showed that minority race/ethnicity and low socioeconomic status are correlated with more negative attitudes toward police and teachers, and more positive perceptions of doctors and firefighters

Help Received
I designed the questionnaire and made all the mathematical calculations by myself but I consulted with Sergio Ramos, engineer, and Gary Remiker, mathematics teacher, regarding the mathematical analysis.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

Grant J. Gallagher

Project Number

J0408

Project Title

Modification of a Ball Machine to Better Approximate a Human Tennis Swing by Providing a Visual Cue

Abstract

Objectives/Goals

The objective of this study is to determine if visual cues help the interaction between humans and machines.

Methods/Materials

Solar cell, headlamp, microcontroller (Arduino), circuit breadboard, laptop computer, light emitting diodes (LEDs), resistor, speaker, wires, potentiometer, Legos, ball machine, tennis balls, plastic cones, and tennis player. Built a system composed of an optical system having a light source and a detector that detects when balls are shot out of the machine. Programmed the system to detect a ball being shot out of the machine, to predict when the next ball will be shot out of the machine, and to activate the LEDs just prior to the next ball being shot out. Tested tennis player to compare shot accuracy with and without LEDs being activated.

Results

I returned tennis balls shot from the ball machine both with and without the LEDs activated to determine whether a visual cue improved shot accuracy in trying to hit tennis balls into the target area. The system I built provided the visual cue required to improve my shot accuracy when trying to hit tennis balls into the target area at all speeds. The visual cue did help the interaction between the human and the machine.

Conclusions/Discussion

The results appear to indicate that a ball machine can be modified to better approximate a human tennis swing by providing a visual cue. Modifying the ball machine by attaching LEDs to alert a player just before the ball is shot out of the machine provides a visual cue similar to an opponent taking their racquet back. The results show that activating LEDs just before the ball is shot out of the ball machine does improve accuracy.

This research demonstrates that in certain scenarios providing technology with visual cues that are normally provided by one human to another human can be helpful. Providing technology such as robotic machinery that interacts with humans with visual and/or audio cues that are typically provided by one human to another may help improve the interaction between the human and the robotic machine.

Summary Statement

I constructed an optical/electronic system that provides a ball machine with a visual cue (LEDs that light up prior to a tennis ball being shot out) that improves shot accuracy of a tennis player trying to hit the tennis balls.

Help Received

I built the optical/electronic system myself under the supervision of my father. I programmed the system by myself. My father helped me debug the program, and helped me get the system to work on the faster ball machine speeds. I hit all the tennis balls, tabulated the data, and produced the graphs by myself.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

Jasmine T. Gates

Project Number

J0409

Project Title

The Misinformation Effect: Can the Way a Question Is Framed Alter a Subject's Recollection of an Event?

Abstract

Objectives/Goals

The object of this experiment is to determine whether a subject's memory of an event can be altered by framing questions given after the event has occurred. The specific goal is to determine whether it is easier to influence a subject's memory of an event after more time has passed.

Methods/Materials

In this study, I used 2 classrooms (21 students in each) and staged a #mistaken delivery# to create an event for the students. I administered 2 questionnaires to each group. Half the students were given #neutral# questionnaires that were designed to see what they remembered, but not influence those memories. The other half of the class were given #manipulative# questionnaires that were designed to influence their memory of the event. For the first group I gave them the questions 20 minutes after the event, for the second group, I gave them the questions 5 days after the event.

Results

The students who were given the manipulative questionnaires 5 days after the event did not demonstrate a consistent change in their memories of the event over the students who were given manipulative questionnaires 20 minutes after the event. However, in both classes, 50% of the students (manipulated and neutral groups included) recalled seeing an object that was 'suggested' but not actually present at the event. 100% of the students given the manipulative questionnaire 5 days after the event listed the incorrect name of the teacher based on the way the question was asked.

Conclusions/Discussion

Though there were instances of subjects in the study remembering pieces of the 'misinformation' given, there is not a consistent pattern of memory alteration in the group given the manipulative questionnaires 5 days after the event to determine whether the questions influenced the subjects' recall of the event. While the results are inconclusive, the study does raise more questions regarding the complex ways in which we can be influenced. There is room for further study of how suggestive questioning can alter a subject's memory.

Summary Statement

I examined how a subject's memory of an event can be altered through framing questions and whether time plays a significant role in how easily a memory can be influenced.

Help Received

I designed the experiment myself and enlisted support from the 'Parent Volunteer' and the Classroom Teacher to stage the 'event.'

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

McKenna L. Goodson

Project Number

J0410

Project Title

Occupation Fascination: A Study of Gender Role Stereotypes in Young Children

Abstract

Objectives/Goals

The purpose of this experiment was to investigate gender role stereotypes among young children. It was hypothesized that if the gender of a child affects whether he or she will draw a picture of a male or female in a certain professional role, then more males will draw a man and more females will draw a woman in the role.

Methods/Materials

Fifty kindergarten children were asked to draw figures of a veterinarian and a karate black belt, two professions typically populated by males. They were given 15 minutes to draw with assorted crayons on white paper. After they had finished their drawings, they were asked to name each figure. The pages were then collected and analyzed to determine the gender portrayed in the drawings.

Results

When the drawings were analyzed, the results showed that 24 out of the 25 girls drew female veterinarians, and 16 out of the 25 boys drew male veterinarians. Only one boy drew a female black belt, and 17 out of the 25 girls drew female black belts.

Conclusions/Discussion

To summarize, the girls tended to draw females in those professions, and the boys tended to draw males in those professions. Even though the hypothesis in this study was supported, it remains unclear whether the boys were acting on stereotypical beliefs of gender roles, and whether the girls showed more flexibility in their gender stereotypes.

Summary Statement

When asked to draw occupations typically populated by males, I found that five to six-year-old girls drew females while five to six-year-old boys drew males.

Help Received

My teacher gave me feedback and advice on written aspects of my project. I had adult helpers and teachers in the Kindergarten classroom assisting me with managing the students during my visit.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Safaa F. Hussain

Project Number
J0411

Project Title
To Praise or Not to Praise?

Abstract

Objectives/Goals
The objective of this study was to determine if the impact of praise and criticism on performance change with age, specifically on adults and sixth graders.

Methods/Materials
Informed consent was obtained from 40 randomly selected participants, 20 adults and 20 sixth graders. The sample space was divided equally between males and females. An intellectual test, the game Scramble, and a physical test, running 20 meters were observed. 10 from each age group did the intellectual test, while the other half performed the physical test on a flat surface with minimal obstacles. Each participant executed one of these tests 4 times, and after the first 3 tests they were given either written praise, criticism, or verbal praise. When each participant finished all of his or her tests, they were given 3 survey questions on the effectiveness of the stimuli.

Results
I studied the scores from 40 participants of two age groups, adults and sixth graders. Seventy percent of the sixth graders performed best with verbal praise, while sixty percent of the adults performed best with criticism. The most effective stimuli remained consistent in both intellectual and physical tests for sixth graders and adults. Male and female participants varied in the type of most effective stimuli, excluding the sixth grade physical test. For the survey questions, the majority, thirty five percent, of sixth graders replied that verbal praise worked seemingly best for them, while adult majority, forty percent, replied that they perceived all forms of stimuli were equally effective.

Conclusions/Discussion
Results show that the effects of praise and criticism do change with age. However, the effects of physical versus intellectual tests did not change the most effective stimuli for each age group. With the exception of sixth grade physical test, males and females had different outcomes based on the type of stimuli.

Summary Statement
I found that the impact of verbal praise, criticism, and written praise does change with age, but not with the type of test or gender.

Help Received
I designed and performed the experiment on my own, with the exception of my science teacher giving guidance on how to display raw data in graphs.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

Christopher C. Kulick

Project Number

J0412

Project Title

Investigating Handicap Accessibility Compliance at North County Bus Stops

Abstract

Objectives/Goals

Our public transportation system must be able to provide affordable and accessible services for those with disabilities. The focus of my study was to review my area bus stops to determine if they comply with standards to make the system usable for those with disabilities.

Methods/Materials

For this study, I focused on the important element of a bus stop which is the boarding and alighting area. It is important that this area be paved, free of obstructions and have a flat surface to avoid unsafe situations for people who are in a wheelchair. I selected a bus route (Bus 304) from our local North County Transit District that had a varied terrain through downtown Encinitas through roads with limited pedestrian access, and services areas that are both new and old. For this study, I reviewed all the eight (8) published stops for this route and sampled half of the many unpublished stops (13). I assembled tools to make measurements including a tape measure, a smart *phone app for collecting degree of slope, and a camera including a standardized form for consistent data collection.

Results

The results show that the bus stops are not 100% usable for people with disabilities with 9.5% of the sampled stops not being usable by ADA specifications. This is based on the adherence to the standards for the boarding and alighting area. For the optional features such as the bus bench and bus shelter, these were found to not be compliant with ADA specifications. For bus benches, 83.3% of the stops equipped with benches were not usable and for shelters, 50% were not considered usable. These are not mandatory, but from these results these features are not provided for ADA usability but for general passenger convenience.

Conclusions/Discussion

The stops that had the most violations of the specification (no pavement or grading at the stop) were in fairly remote locations that did not connect to any major point of interest such that the impact on people with disabilities is very minimal. The bus stops that served businesses, the community college, the City of Encinitas Transit Center were all compliant making the system usable for major points of interest.

Summary Statement

I reviewed public bus stops to measure compliance with standards to support those with disabilities to ensure a usable transportation system.

Help Received

I requested standards from a Transportation Engineering Company (TranSystems Corporation) to provide a template for my study

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Liam B.K. Mason

Project Number
J0413

Project Title
To Wear or Not to Wear

Abstract

Objectives/Goals
The objective of this study was to measure and analyze how running unshod affects a runner's speed and strike style compared to running shod.

Methods/Materials
Volunteers ran 200 meters with and without shoes. A the 25, 50, 100, and 200 meters marks, the volunteers' time was recorded. At the 25 and 200 meter distance markers, each volunteer's strike style was recorded using a GoPro video camera.

Two sets of trials were performed. In the first, larger trial, all subjects ran shod first and then ran unshod. In the second, smaller trial, a coin-flip determined whether subjects ran shod or unshod first, thus randomizing the data.

In both sets of trials, subjects ran on the same recycled-rubber track surface.

Results
Analysis of the data showed that running unshod did not consistently change speed and strike style across all subjects. Whether a subject was faster unshod or slower unshod depended on the individual subject. In addition, most subjects' strike styles remained the same regardless of whether they were running shod or unshod.

Conclusions/Discussion
For any distance, no significant difference was found between average shod times and average unshod times, and running unshod did not change the majority of subjects' strike patterns. This is most likely because subjects in this test have been running with shoes most of their lives and have developed a habitual running style.

Analysis of the data from the second set of trials showed that, on average, males and subjects under 20 ran faster unshod, and that, on average, females and subjects 20 and over ran slower unshod.

Summary Statement
As measured by the time to complete a 200-meter race, there is no overall difference between running barefoot vs. with shoes.

Help Received
I received help from my parents and bother to record volunteers' running times. My science teacher and parent volunteers helped me refine my testing methods.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Matthew S. Mekari

Project Number
J0414

Project Title
The Power of Color

Abstract

Objectives/Goals
The goal of this experiment was to find out which color makes a visual search the easiest and most difficult for each gender.

Methods/Materials
11 sheets of computer paper, 1 package of 10 Crayola Classic Color markers, stopwatch, writing supplies 6 spreadsheets.

Results
In terms of difficultly, the men and women had similar results. Both genders showed to struggle when the color of the search is yellow. When testing which color made the search the least difficult, the men and women varied. Men were shown to find the target of the search the fastest when the search was colored brown and women had the easiest time when the search was black.

Conclusions/Discussion
The results of this experiment showed that the color yellow dominated as the hardest to find for each gender. The color that made the search the easiest for the males was brown and for the females was black. The reason why the results showed these colors in specific is because each color has a specific effect on our minds. The reason yellow made the search the most difficult was because it overwhelms the human mind. On the other hand, brown and black made the test easy because these colors are found to have a correlation with relaxation and simplicity. These results can be used to expand knowledge on what affects certain colors have on the human brain to be used by scientists in real world applications such as deciding what colors should be used in a company's advertisements or to figure out what color to paint your relaxation room.

Summary Statement
In this experiment, I showed that different colors can have different affects on the human mind through the form of completing a simple visual search.

Help Received
I had no help in this experiment. I made, finalized and administered the test by myself.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

Christina Miles; Haley Spranger

Project Number

J0415

Project Title

The Analysis of Mindful Meditation in the Elementary Classroom

Abstract

Objectives/Goals

Our initial study examined the effectiveness of therapeutic breathing on brainwave testing. We decided to apply the technique of diaphragmatic breathing in combination with mindful meditation, to a classroom setting. Our question was, does mindful meditation improve a student's attention and ability to focus? The goal of this study was to instruct students and teachers on a practical way to reduce stress and improve focus.

Methods/Materials

Word searches for 5th and 3rd graders, online mediation educational video "Just Breathe# and "Stunning Aquarium and Soothing Music," Teacher Behavioral Log. A 5th grade and 3rd grade class was selected for this study. Each class was given an initial word search, then instructed on breathing and meditation. They were given a post test after the initial mediation session. The classes participated in meditation 2 times a week for 3 weeks, 10 minute sessions. Behavior Log 1 hour before and after mediation. After the final meditation session, students were given a post test

Results

Both classes had improved focus testing after 3 weeks. In the 5th grade class, 66% of the students had improved test scores after the first mediation session and 79% of the students improved after 3 weeks. In the 3rd grade class, 42% of the students improved after initial meditation session and 62% had improved scores after 3 weeks. After the last meditation session, 58% of the 5th graders and 50% of the 3rd graders reported feeling relaxed after 10 minutes of meditation. By the last session, both teachers documented zero disturbances 1 hour after meditation.

Conclusions/Discussion

The findings of this study were significant because more than 50% of the students in both classes were able to benefit from 10 minutes of meditation. The documented feedback from the teachers was that there was a noticeable decrease of disturbances after meditation. The 5th grade teacher also identified 5 students with learning disabilities, and 3 out of 5 of the students had improved focus test scores. We presented our study to the administrators in our school and we plan to train teachers as well as set up a mentorship program, with specific focus on kids with ADHD.

Summary Statement

Mindful Meditation in the elementary classroom, improves students' focus, decreases stress and enhances learning.

Help Received

Mrs. Denenny (5th grade teacher), Mr. Miler (3rd grade teacher) at McPherson Magnet School.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Mollie R. Moniz

Project Number
J0416

Project Title
The Bias between Real and Powdered Food

Abstract

Objectives/Goals
in my project, I wanted to test if there was a bias between real and powdered food because of how food is advertised and viewed in the media and people's view's on food that were instilled at an early age. I also wanted see if this bias could be changed.

Methods/Materials
Materials: Hungry Jack powdered mashed potatoes, potatoes,water, salt, pepper, PBfit powdered peanut butter, Skippy peanut butter, 2% milk, and 2% powdered milk

Method:Subjects were given samples of foods then asked to answer surveys which were tabulated and compared. Subjects were then given nutritional information about their food.

Results
Most of my subjects grew up with biases against powdered food from either their family influences or from media and advertising opinions. Whole food was thought to be the better option but after the test subjects tasted the powered foods, they were surprised to learn that the food not only tasted as good but was nutritionally similar.

Conclusions/Discussion
The bias against powdered food is real. People who believed that powdered food was bad or tasteless learned that it did taste good, was healthy, had a long shelf life and portable. Many actually changed their minds about the way they perceived powdered food and were willing to try other powdered products with less prejudice than before.

Summary Statement
The preconceived bias about powdered food because of media advertising and family views is still strong but changeable when people are given the opportunity to judge for themselves.

Help Received
None. All food was prepared and distributed by me. I designed and tabulated the survey results myself.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Kaya L. Moore

Project Number
J0417

Project Title
What Is the Effect of White Noise on Memory?

Abstract

Objectives/Goals
The objective of this study is to determine whether or not white noise has a negative impact on memory.

Methods/Materials
A noise emitting device, approximately 50 students, 20 images, a stopwatch.

Results
Fifty students were tested on how well they could recall 10 images in order with white noise in the background and then with no noise at all. After testing all of the students, I found out that my hypothesis was incorrect. From my experiment, white noise actually assisted students on remembering the images.

Conclusions/Discussion
The results of my experiment contradicted with my hypothesis. I was led to believe, from my research, that white noise would have a negative affect on memory because white noise can result in the release of cortisol, a stress hormone. To much cortisol release can result in slight memory loss and in rare cases, brain damage. There are various reasons as to why students resulted higher with white noise, but I believe the leading cause is because the student is exposed constantly to white noise and has become partially imune.

Summary Statement
I determined whether or not white noise had a negative or positive affect on memory by testing students on their memory recall.

Help Received
I conducted the experiments and drew the conclusion by myself, but my science teacher assisted me in my research.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Braden L. Nucum

Project Number
J0418

Project Title
Excessive Use of Electronic Video Games: Do Children Excessively Use Non-Internet Games More than Internet Games?

Abstract

Objectives/Goals
I completed my project to determine whether people are excessively using electronic video games. My hypothesis was "If I survey members of different age groups (11 years old and younger, 12-18 years old, 19 years old and older) about their electronic video gaming habits, then members of the youngest age group will excessively use non-internet games more than internet games because internet games are more complex, they involve social interactions and younger children have less freedom to use the internet when compared to older children and adults."

Methods/Materials
To test my hypothesis, I made a questionnaire based off of DSM-5's criteria for Internet Gaming Disorder which may become an official diagnosis in the future. A total of 426 people in the community completed my questionnaire. I recruited participants at movie theaters, Del Amo Mall, arcades, and schools including St. John Fisher and The University of California, Berkeley between January 14, 2017 and January 29, 2017.

Results
In the youngest age group I discovered that 12.7% of children excessively use internet games and 23.9% excessively use non-internet games. I found 6.2% of adolescents 12 to 18 years of age excessively use internet games while 6.9% excessively use non-internet games. In the oldest group I discovered 14.3% of adults excessively use internet games and 8.5% excessively use non-internet games. Overall, I found 11.0% of all the subjects excessively use internet games and 13.1% of all the subjects excessively use non-internet games. Furthermore, I discovered 15.5% of the members of the youngest age group, 3.5% of the members of the middle age group, and 0% of the oldest age group met the criteria for excessive use of non-internet games but did not meet the criteria for excessive use of internet games.

Conclusions/Discussion
My results proved my hypothesis that the members of the youngest age group would excessively use non-internet games more than internet games. My results supported the idea that DSM-5's diagnosis of "Internet Gaming Disorder" should be "Gaming Disorder". My results added more clarity to the diagnosis which will help to ensure people in the future are accurately diagnosed so they can obtain appropriate treatment. Previous studies have shown people who have symptoms consistent with Internet Gaming Disorder experience a higher rate of depression, anxiety and aggression.

Summary Statement
The goal of my project is to determine whether people excessively use electronic video games.

Help Received
I made the questionnaire and analyzed the data by myself. My family members helped me recruit subjects and organize the data.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Nadia M. Salah

Project Number
J0419

Project Title
Is Your Sight Controlled by a Stereotype?

Abstract

Objectives/Goals
The objective of this project is to see which gender judges which gender more based on appearance.

Methods/Materials
photos of both genders, T.V, pencil, computer, 50 volunteers, and worksheets

Results
Both genders that i showed pictures to and answered the worksheets judged women more based on appearance.

Conclusions/Discussion
the two trials revealed that both genders judged the women more than the men. it is concluded that women were judged by both genders.

Summary Statement
As I showed the volunteers pictures of male and female that have a good appearance and a bad appearance, i found that they both judged the female more.

Help Received
Mrs. Arwa for her guidance.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Maya Silberstein

Project Number
J0420

Project Title
The Morality of Middle Schoolers

Abstract

Objectives/Goals
The objective of this project was to discover whether or not age and gender affects middle schoolers moral decisions.

Methods/Materials
Google survey, notebook, stopwatch or clock. I surveyed 38 middle schoolers with two moral dilemmas taken from Listverse.com and analyzed the results.

Results
The results of my project were that the majority of middle schoolers think that it is morally permissible to steal from the wealthy to give to the poor. In addition, I discovered that males are more likely to give a job to their friend than females.

Conclusions/Discussion
I discovered that age and gender do affect moral decisions. I know this because the answers of each age and gendered differed in some way. This expands our knowledge on the topic because these are the moral views of the current generation of young adults. In addition, I concluded that as people grow older, even by just two or three years, their moral code can completely change.

Summary Statement
After surveying 38 middle schoolers with moral dilemmas, I found that age and gender do have an affect on morality.

Help Received
My science teacher, Ms.Deveau helped me to format and advised me on how to best convey the results of my research. In addtion, the science department chair at my school, Dr.Cheryl Eisen, helped me throughout my experiments.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Talia S. Tizabi

Project Number
J0421

Project Title
"App"solutely Irresistible

Abstract

Objectives/Goals
The goal of this project is to determine how much time people spend on their technology devices & whether age/gender impacts this. The information learned from this experiment may assist people in making better decisions about their technology usage.

Methods/Materials
Test subjects went about their normal usage for seven days. After seven days, they accessed their data usage by accessing the #Battery# option within "Settings" on their Apple devices. The users took a screenshot of the data and submitted it for analysis.

Results
The data shows that females spend an average of 19.07 hours per week on their devices and males spend 16.06 hours, Middle age adult females spent an average of 20,41 hours per week on their devices, as compared to 19.10 hours for seniors and 17.68 hours for teenagers. Middle age adult males spent an average of 19.10 hours per week on their devices, as compared to 14.78 hours for seniors and 14.29 hours for teenagers.

Conclusions/Discussion
Between genders, female usage of technology exceeds that of males in every age category. Regardless of gender, technology is used most frequently by middle aged adults, followed by seniors and then teenager. Almost all of the test subjects spent around 24 hours using their devices in one week. This means that the average person spends one full day on their device or 15% of there life on a device. This could have social, safety, and health implications on one's life.

Summary Statement
I researched the amount of time that is spent by various ages and genders on a variety of popular apps to prove, sucessfuly, just how addicted society had become to technology.

Help Received
I conducted the experiment myself, by gathering data from the subject. I was also guided with the data analysis by The Pressman Academy science department.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Olivia C. Tobin

Project Number
J0422

Project Title
Next Steps of Preschool Learners

Abstract

Objectives/Goals
The purpose of this project is to determine if preschool is a predictor of future success, as measured by a survey the researcher handed out, asking for success factors, such as employment, salary, highest education level, and part-time or full-time schedule. Last year, the researcher did this project only using annual salary as a measure of future success.

Methods/Materials
To run this project, the researcher had to collect 30 surveys from 30 randomly chosen participants. Then the data for the survey was recorded onto a tally chart.

Results
56.67% of the participants had gone to preschool. All of the participants are employed. The people who went to preschool had a 6.79% higher chance of getting a higher paid job. 6 out of 13 of the students who went to preschool pursued higher education compared to the 5 out of 17 who had not gone to preschool and pursued higher education.

Conclusions/Discussion
This science fair project contributes towards educational society. This project will hopefully help parents questioning whether they should enroll their students in preschool. The researcher thinks that everybody should know the positive effects that preschool has on early learners. The researcher found that preschool is a predictor of future success.

Summary Statement
By passing out surveys to 30 adults, I found that going to preschool gives you a better chance of having a successful future.

Help Received
Julie Davenport for spell checking. Ms. Timassy-Nelson for helping with my project last year and providing feedback. Mrs. Schreiner for encouragement.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Hannah C. Valencia

Project Number
J0423

Project Title
True Colors: A Study of Implicit Bias

Abstract

Objectives/Goals
Race relations have always been a difficult and sometimes painful topic to discuss in America. In the recent presidential elections, racial biases and attitudes seemed to be a major factor, something I found very discouraging. It was in this environment that I sought to better understand the way people of different races see each other. I wanted to determine whether children nowadays typecast others because of their skin tones, whether these attitudes change as they get older, and will gender affect their viewpoints. My experiment is based on a landmark study carried out by Kenneth and Mamie Clark in the 1940s. They found that people exhibited implicit bias in how they judged others based on skin color.

Methods/Materials
I showed students, in grades Kinder through 8th, pictures of girls that were identical in everything but skin color. Participants were asked which characters were prettiest or least pretty, smartest or least smart, good or bad, which skin color they themselves had, and which color they would prefer. I organized the data by grade, gender, and what skin color the participants associated themselves with.

Results
Most students showed a preference to lighter skin tones in general. Forty-six percent chose the lighter skin tones as the prettiest and 35% as nicest. They judged the dark-skinned figures as least pretty, 34%, and bad, 36%. Twenty-six percent of the children classified the medium skin tone as the smartest while 26% chose the lightest skin tone as not smart. Boys tended to ascribe positive traits to fairer skin. Girls tended to ascribe positive traits to fairer skin in all categories except intelligence. Girls seemed to ascribe intelligence more to the medium skin colors. In the higher grades, students were more hesitant to judge character and qualities based on skin color alone. Majority of the participants were comfortable with their own skin tone.

Conclusions/Discussion
My data shows that within my study population, kids of today still show traces of implicit bias. We should acknowledge such biases so we can be more aware of factors that affect our attitudes and actions. My data shows that children today, as compared to subjects in the 1940s, are more conscious of these prejudgments. We are slowly learning how to judge others not merely by the color of their skin.

Summary Statement
I sought to find if children of today are affected by implicit bias, that is, ascribing prejudgments about attractiveness, intelligence, and character stereotypes to people of different skin colors.

Help Received
Teachers at St. Edward School and my parents assisted me in obtaining parent signatures on the Human Informed Consent forms. My father introduced me to a video that led to my interest in the Clark doll experiments. My mother helped me in creating graphs in Excel.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
Liana D. Vangyi

Project Number
J0424

Project Title
How Occupational Stress Affects Diet Intake

Abstract

Objectives/Goals
The objective of this study is to find how occupational stress affects diet intake of women ages 19-50.

Methods/Materials
4 occupations; 10 nurses,10 teachers,10 managers, and 10 office workers; 5 days of diet recall recording template, stress survey, questionnaire, recommended dietary intake from eatforhealth.gov

Results
Each of the 40 participants completed a diet recall for 5 days along with a stress survey and a questionnaire during that time. Office workers consumed the closest to the recommended dietary intake while teachers ate the poorest. The results of the stress survey show that the office workers had the lowest stress while the teachers had the highest stress level.

Conclusions/Discussion
Occupational stress does have an impact on diet intakes. Based on the diet recalls and the stress surveys completed, the office workers ate the closest to the recommended dietary intake while having the lowest occupational stress. The teachers, however, ate the poorest while having the highest stress level.

Summary Statement
I found that occupational stress does have an impact on diet intake.

Help Received
My project advisor, Lori Salazar, helped me revise my project outline.

CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

Eva M. Weller

Project Number

J0425

Project Title

What Influences Early-Teens' Views of Climate Change in Humboldt County, California?

Abstract

Objectives/Goals

Climate change is one of the biggest challenges my generation will face. The purpose of my project was to find what factors influence junior high students' opinions on climate change.

Methods/Materials

I designed an online survey using Surveygizmo presenting various questions around different topics shown to influence people's opinions of climate change. I sent my survey to schools across Humboldt County.

Results

I surveyed a total of 204 students, 85% of which believed climate change was happening. The top 3 student concerns were melting glaciers, forest fires, and drought. While time spent outdoors generally didn't affect belief in climate change, people who visited more national parks were more likely to say climate change was happening. Overall students' opinions on climate change were influenced most by scientific studies, news coverage, and parents; in fact, students who said they didn't believe in climate change were most influenced by news coverage. Teens who believed in climate change also said that they thought adults weren't doing enough to prevent it.

Conclusions/Discussion

My study found that a higher percentage of teens in Humboldt County believe in climate change than the adults in Humboldt County and in the the rest of the nation. I also found that most students think adults are not doing enough to prevent climate change and this tells me that my generation will have to lead efforts to fight climate change.

Summary Statement

I conducted a survey to determine what influenced early teens' views on climate change.

Help Received

None. I designed the survey and analyzed the data myself.