

The Seventh Annual
Ranger Research Day

Friday, April 26, 2013
Alabaster Room ~ Alva campus



**LIST OF
ABSTRACTS**

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Northwestern Oklahoma State University
 Alva, Oklahoma ~ Friday, April 26, 2013
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ABSTRACTS

Business

2.02 Business Administration

2.02.01, “Why is the Enrollment in the Division of Business Down on the Enid Campus?” [Poster]

Dakota Helvie & Jacob Roberson (Dr. Kimberly Soulek, Sponsor)

This paper examines three factors that may be attributing to the decrease in enrollment of the Division of Business at the Enid Campus. Two factors primarily deal with federal and state student funding, including recent changes in OKLAHOMA’S PROMISE and Pell grants. The third purpose examines the economic factors that have changed in Northwest Oklahoma, specifically the changes in energy exploration such as the growing market and need for renewable energy such as solar and wind. A qualitative survey that was created and conducted utilizing Qualtrics.com during the fall of 2012, asked questions pertaining to the participant’s postsecondary education, funding of that education, consideration of other career paths, and demographic information. The survey results were then tested for significance to accept or reject the above proposed hypothesizes showing significant data resulting from these factors and a valid reflection upon the decreasing enrollment in the Division of Business on the Enid campus.

Education

3.01 Curriculum

3.01.01, “The Standardized Testing Debate” [Conference Paper]

Jaden Crocker (Dr. James Bell, Sponsor)

After the *No Child Left Behind Act* (NCLB) passed in 2001, states were required to test all students in the areas of science, math, and reading through standardized testing. This means that every child is required to take time out of his or her school day a few days a year to take a test that will measure how much he or she has learned that year. The debate over

standardized testing has been raging for decades but has heightened since the passing of NCLB. Many argue that standardized testing improves the education system as a whole, which then, in turn, is able to serve each individual student better. In contrast, many others argue that it forces a teacher to conform to what needs to be taught for the test, instead of teaching what is best for his or her students. In my essay, I will explore the pros and cons of standardized testing and then establish whether it is better for the community or better for the individual, or if it is beneficial or detrimental for both.

3.05 Professional Teacher Education

3.05.01, “Teacher Perceptions of Black Male Students” [Conference Paper] Dr. Carlos Minor (Division of Education)

There is no doubt that despite the death of the system of American apartheid, as well as abundance evidence to the contrary, there is a segment of American society that believes that Blacks in general, Black males in particular, are inherently incapable of doing anything intellectual. Teachers are a microcosm of American society, and it would stand to reason that there are in-service teachers who harbor racist attitudes towards Black males. This study was conducted using an anonymous survey for the purpose of gauging the attitudes of in-service teachers towards Black male students. A sample of fifty in-service teachers was gathered, the majority of whom were White. These fifty teachers were well educated and had years of teaching experience under their collective belts. One hundred percent of these in-service teachers were of the opinion that Black male students can succeed academically. This sample of in-service teachers felt that extraneous variables such as poverty and parental apathy could have a deleterious impact on Black male academic performance; in their opinion race was not a deciding factor in whether or not Black males can perform academically.

3.06 Psychology

3.06.01, “Trauma and Pet Companionship” [Poster] Jessica C. Blanchard (Dr. Sherril Stone, Sponsor)

In recent years there have been studies conducted on the usefulness of pets and animals in relationship to therapy and overall improvements in a human’s physical, mental, and emotional well-being. The current research project was conducted to determine if a correlation exists between a person’s history of trauma and the relationship they have with their pet. The hypothesis is that when a person experiences trauma, s/he often ends up depending on his/her pet as a means of support and love, versus the support of a fellow human. This research was performed by using a survey that consisted of demographic data and personal opinion questions in which the person responded by using a Likert scale.

3.06.02, “Attitudes of Bullying Before and After Student Teaching” [Poster]

Sarah Coufal & Kelsey Ingram (Dr. Nancy Knous, Sponsor)

Bullying is an increasingly problematic occurrence among school-age children. The acts of the bully provoke issues in every aspect of the victim’s life. The authors believe that today, students bully because it brings them joy or because it gives them a common cause within a

group. There is nothing positive about bullying. We wanted to see what role teachers play in the act of bullying and whether teachers' beliefs about how they would handle bullying change before and during student teaching experiences. We asked the question, "Do student teachers' attitudes about bullying change while in the classroom and after being in the field?" To answer this, we surveyed a class of education students twice using the Handling Bullying Questionnaire (Rigby 2010): once before performing their student teaching and once at midterm. Results are being analyzed and will be presented at Ranger Research Day.

3.06.03, "Opinions of Same-Sex Marriage" [Conference Paper]

Gabriel Dunbar (Dr. Nancy Knous, Sponsor)

The following research was conducted to identify the relationship between income level and opinion of same-sex marriage. The participants were chosen from a convenience sample on the Alva campus of Northwestern Oklahoma State University. The participants were at least eighteen years of age or older and consisted of students in the freshman, sophomore, junior, senior, and graduate levels. Questionnaires were presented to the participants asking about income level, opinion of same-sex marriage, age, sex, grade level, and state or nation of origin. The data concerning income level and opinion of same-sex marriage were correlated to determine if a significant relationship exists between the two. The research has not yet been completed but will be finished and ready to be presented on Ranger Research Day.

3.06.04, "The Relationship between Education and Technology" [Poster]

Heather Hollingshead & Renae Acker (Dr. Nancy Knous, Sponsor)

The relationship between technology and education was the data studied. We surveyed approximately 100 students from the Northwestern Oklahoma State University campus. Students completed a two page survey regarding questions about using technology in the classroom and how it affected their learning process. We hypothesize that students like the use of computers in the classroom setting but that they may also cause a distraction to their process of learning.

3.06.05, "The Effects of Transitional Living Shelters: Improved Self-Efficacy and Self-Esteem?" [Poster]

Taylor DeVine (Dr. Nancy Knous, Sponsor)

The effects of living in a Transitional Living Shelter after abuse were examined by way of individual surveys. Women in these shelters with no specific age range, race, or ethnic background were given a survey of the benefits of living in a transitional living shelter. Basic findings will be completed and presented on April 26, 2013.

3.06.06, "Stimulant Usage in College Students" [Poster]

Ashley Carroll & Jessica Gulick (Dr. Nancy Knous, Sponsor)

Expanding the knowledge of how many college students have used a stimulant was the reason for the study. At the beginning, the main goal was to see if any of the students at Northwestern Oklahoma State University had used prescription medications to help them stay focused when studying. As the research progressed, many different stimulants, such as caffeine, sugar, or energy drinks, were brought to the attention of the investigators. The survey that the examiners passed out asked questions, such as how many students were actually prescribed the medicine to help maintain attention disorders, what the reasons were

for taking the medicine, and how they acquired the medicine. There were approximately 100 surveys passed out to students of different grade levels, ethnic backgrounds, age, and gender. The findings are still being processed and the numbers will be posted on April 26th, 2013.

3.06.07, “Reduction of Test Anxiety” [Poster]

Ronita Coleman & Talytha Williams (Dr. Nancy Knous, Sponsor)

Some students struggle with test anxiety. Too much anxiety can become a problem if it interferes with an individual’s ability to do his or her best. We developed a 20 question survey asking various questions pertaining to anxiety during exams. We passed out 100 surveys to male and female college students of different races on Northwestern Oklahoma State University’s campus. During this research, we expect to find out how many students struggle with test anxiety and if some strategies will help reduce some of the individual’s level of anxiety during an examination.

3.06.08, “Causal Factors of Smoking: Is Peer Pressure the Leading Cause?” [Poster]

Jill Weidemann (Dr. Nancy Knous, Sponsor)

Research shows that peer pressure, family, and the media are the leading causes of people trying a cigarette for the first time. The purpose of this experiment is to find which of these factors is the most influential in encouraging people to try a cigarette. Fifty students at Northwestern Oklahoma State University in Alva, Oklahoma, were asked to complete a survey. This survey allows students to reveal which factor influenced them to first try a cigarette. It also is used to determine how much influence friends have on an individual’s smoking habits. It is hypothesized that peer pressure will be the highest influence; therefore, the extent of friend group influence will be measured. This is done by comparing the individual’s personal smoking status with their group of friends to see if smoking habits reflect that of peer groups. Results of this experiment will be available at Ranger Research Day.

3.06.09, “Which Theory of Creativity is Most Prevalent?” [Poster]

Amie Berryman and Scott Strassburger (Dr. Nancy Knous, Sponsor)

Our research is based off of four major theories of creativity: The Propulsion Model Theory, The Investment Theory, The Theory of Planned Behavior, and The Componential Framework of Creativity. We designed an 18 question survey asking age and gender. The remaining 16 questions are geared solely toward the four theories of creativity listed above. We wanted to know which theory was most widely accepted and if there was a difference between males and females in preferences. Data was collected from 50 students at the Ponca City University Center. The participants who volunteered ranged from freshmen to senior students. We asked site coordinators for permission to ask students to participate voluntarily. The results will be available on Ranger Research Day.

Liberal Arts

4.02 English

4.02.01, “Side-by-Side Language Learning” [Conference Paper]

Kathryn “Brooke” Palmer (Prof. Kathy Earnest, Sponsor)

Side-by-Side Language Learning is a tool I experimented with when I taught high school Spanish. Spanish was always easier for me to understand because I loved English. The concepts of Spanish made sense because I understood what they were in English. However, teaching a concept is different from learning one, so when I taught Spanish I was not sure how to approach it. Many of the students in my classes were confused when I would bring up terms such as “subjunctive,” “conditional,” “infinitive,” “irregular verbs,” and so on. “We don’t have these in English,” they would say. “Yes,” I would respond, “you use them every day when you speak and write in English.” In order to help students understand, I approached a new lesson by showing it in English first and then transferring the lesson into Spanish. Once I began showing them something familiar the Spanish example was easier for them to grasp. I think Side-by-Side Language Learning would be a great concept to implement into school systems. Would it be difficult? Yes, at first, but with all difficulties comes learning experiences and gained knowledge. My presentation is a small example of Side-by-Side Language Learning and how schools can integrate this idea.

4.02.02, “The Intrinsic Advantages of Lower Class Life in Romantic and Victorian England” [Conference Paper]

Jake Streck (Dr. Kathryn Lane, Sponsor)

Throughout both the Romantic and Victorian periods, several authors wrote from the perspective of or with the concern about the low financial classes in England. While being rich or in the upper class obviously procured a much easier life than being poor, it seems, from the writings of authors such as William Blake, E.B. Browning, and Charles Lamb, the experience of being a part of the lower class provided more knowledge of how the world actually operates, and the authors also depicted money as having a somewhat corruptive power. Using a Marxist perspective, I plan to explore the differences of upper and lower class living, how authors viewed each style of life, and the possible stronger appreciation for life and other values that the poor may possess over the rich.

4.08 Political Science

4.08.01, “Individuality versus Community” [Conference Paper]

Morgan Biaggi (Dr. Aaron Mason, Sponsor)

From a legal, or criminal, standpoint, an individual understandably does not take priority over the greater good of the community. However, should the greater good of the community trump the individual’s rights in matters of non-criminal activities? Eminent domain allows the government to take personal property, like homes and land, from the individual to give to the community. Nuisance laws allow the government to take personal preference, like clothing and landscape, from the individual in places where a community member may be offended. These examples prompt the questions: is there still individuality when the community is involved and how far can a progressive government stretch its arm

of authority to attain a political agenda? The answer may simply rest in the individual's right to vote.

4.08.02, “We the People . . .” [Poster]

Tia Whitely (Dr. Aaron Mason, Sponsor)

“We the People...” Everyone knows this statement, but it seems the meaning has been lost. The question now is who are “we” and what do “we” stand for? Our vote is our voice and it tells the world who we are and what we stand for. There is a rumor that some believe politics are not worth participating in. The rumor begins, not with words, but with our vote. This poster represents our voting history in America beginning with the Presidential Election of 1824 and ends with the election of 2008. It is meant to illustrate that the percentage of those who exercise their right to vote actually decreases as the eligibility to vote increases throughout our history. It is interesting that the more rights we, the American people, demand and are given, the less we exercise them.

4.10 Social Work

4.10.01, “Interactive Televised Social Work Practice Courses: An Evaluation of On-Site and Remote-Site Students’ Educational Outcomes and Satisfaction” [Poster]

Dr. Kylene Rehder (Department of Social Work)

Social work is a growing profession and its education is expanding through the use of technology supported learning environments. Although distance education opportunities are increasing, social work educators continue to question its suitability. Much of the skepticism is rooted in the belief that to effectively educate about human interaction, instructors need to be face-to-face with students. The problem with this skepticism among social work educators is that it may be influencing student outcomes. The purpose of this quantitative research study was to examine educational outcomes (i.e., course grades and cognitive learning) and levels of student course satisfaction of on-site students relative to remote-site students enrolled in ITV social work practice courses. Participants included thirty-eight bachelor level students enrolled in two social work practice courses at a regional university in Oklahoma. Data was collected on student demographics, final course grades, known learning indicators, and student satisfaction. Data analysis included analyses of covariance (ANCOVA) to determine if there were statistical differences between on-site and remote-site students. Results indicated no statistically significant differences between on-site and remote-site students in regards to academic performance $F(1, 27) = 0.015, p = .902$; learning indicators $F(1, 26) = 0.043, p = .837$; and student satisfaction $F(1, 25) = 0.894, p = .354$, after controlling for age, gender, social work experience, drive time, and job interest. This study concluded that site location does not significantly affect academic performance, learning indicators, or student satisfaction of students enrolled in ITV social work practice courses.

Math & Science

6.01 Biology

6.01.01, “Binaural Beats: A Study on the Effects of Binaural Beats on Brain Waves and Mental Performance” [Poster]

Kent Jensen (Dr. Cynthia Pfeifer-Hill, Sponsor)

Students around the world use a variety of tools and methods to help them improve their test scores. A variety of methods exist, some with potential health risks. This study explores the effectiveness of "binaural beats" as a potential cognitive aid. The premise of binaural beats involves synchronizing brain waves with an audio file, which consists of two similar, but slightly different tones, one in each ear. The two sounds, played simultaneously, cause the brain to synthesize a wave pattern that is only audible to the person hearing the sounds. By recording electroencephalograms (EEGs) of test subjects while they listen to binaural beats, the potential effects can be monitored. The test subjects also took a pre-test and post-test, with listening portions and EEG recording just before taking the test. Subjects were put under a strict time limit in order to simulate a more stressful environment. This experiment is designed to indicate if binaural beats have an effect on brain waves and change cognitive performance.

6.01.02, “Arsenic Testing in Northwestern Oklahoma State University’s Taxidermy Collections and Natural Science Museum” [Poster]

Morgan Reinart, Jeff Martin, & Julia Conneywerdy (Dr. Aaron Place, Sponsor)

Arsenic began to make its way into the process of taxidermy in the 18th century. According to the Center for Disease Control (CDC) and NIOSH, the inhalation or ingestion of arsenic can cause abdominal pain, diarrhea, nausea, vomiting, weakness, shock, collapse, unconsciousness, and in extreme cases, death. Specimens held by the Northwestern Oklahoma State University Natural History Museum were tested for arsenic using an arsine gas reaction. Twenty-five tests were administered to specimens on display and in storage. The results of these tests were mixed. Specimens preserved before 1950 and bird specimens were more likely to contain arsenic than any other specimens. Specimens located in storage areas were also found to contain, on average, more arsenic than those in public spaces. In light of the results, recommendations are made to ensure the continued safety of those viewing and handling specimens at the museum.

6.01.03, “Firefighter Air Consumption in Relation to Body Fat Percentage” [Poster]

Morgan Reinart (Dr. Steven Thompson, Sponsor)

“Firefighting activities require firefighters to work at near maximal heart rates for long periods. The increase in heart rate typically occurs in response to the initial alarm and persists throughout the course of fire suppression activities.” This study’s purposes are to identify whether body fat percentage plays a role in air consumption and to identify an inherent need to maintain a level of fitness that will allow firefighters to work in an immediately dangerous to life or health situation for the longest amount of time possible with a self-contained breathing apparatus. Nine male firefighters, ranging in age from 23-38

and consisting of 3 volunteer and 6 career, were used for this study. A skinfold test was administered to measure their BF%, and each participated in a walk test wearing personal protective equipment and a self-contained breathing apparatus. The participants were scored based on their time to depletion in relationship to their BF%. This study shows there is a significant linear relationship between body fat percentage and the firefighters' air consumption ($p=0.008$). While BF% cannot be deemed the sole determinate in air consumption, its importance in a firefighter's ability to perform his/her job requirements is a significant contributing factor. The results of this study allow for insight into the overexertion and stress placed on a firefighter's cardiovascular system during fires requiring SCBA usage.

6.01.04, "Overweight and Obesity Rates in Firefighters: Overcoming the Epidemic" [Poster]

Morgan Reinart (Dr. Cynthia Pfeifer-Hill, Sponsor)

According to the Food Research and Action Center, 68.8% of American adults are overweight or obese and 35.7% are strictly obese.¹ Firefighters have long been known for their need for a high level of physical fitness, but that fitness level is often lost after attaining a job within the fire service. This study investigated career firefighters across Oklahoma to determine how overweight and obesity statistics measure in comparison to the national average. Along with those statistics, activity levels and suggestions for increasing physical activity levels and decreasing health risk factors were also addressed. A voluntary, anonymous survey was administered to 159 full-time firefighters from nine fire departments throughout Oklahoma. The departments included: Alva, Mustang, Del City, Kingfisher, Noble, Harrah, El Reno, Midwest City, and one unnamed fire department. Overweight and obesity levels were based on the body mass index (BMI) calculations. Based on survey responses, this study showed that Oklahoma firefighters *exceeded* the national average for overweight and obesity rates. 68.8% of Americans were either overweight or obese, whereas 76.73% of surveyed Oklahoma firefighters were overweight or obese. These statistics suggest a renewed effort of attaining a higher overall level of health and fitness is needed by firefighters, not only for their personal well-being but to best serve their community and fellow firefighters.

6.01.05, "Brain Waves Occurring During a Golf Putt" [Poster]

Stephanie Martin (Dr. Cynthia Pfeifer-Hill, Sponsor)

By conducting electroencephalography (EEG), this study records and analyzes different brain waves produced by six golfers on the Northwestern Oklahoma State University Golf team while making a golf putt. All golfers know the feeling of making that important putt. The putting green is where golfers tend to feel the most pressure and stress. Being a member of the NWOSU Golf team myself, I wished to determine which of the four brain waves (alpha, beta, delta, and theta) are dominant during this time. Literature has shown that alpha waves are seen in those who are relaxed and have an effortless alertness. Beta waves are found in those who are in highly stressful situations. Delta waves can be seen in the deepest stage of sleep, and lastly, theta waves are seen in light sleep or drowsiness. I hypothesized that the more advanced and confident golfer will show primarily alpha waves and less experienced golfers will show a dominance of beta waves. This study indicated that delta waves had the most variability in the subjects. Further research shows that delta waves can be found in meditation practices. Understanding brain waves occurring during a golf

putt will allow me to become a better golfer while also providing help to fellow golfers.

6.01.06, “Acupressure: The Effect on Brain Waves” [Poster]

Carmen Sander (Dr. Cynthia Pfeifer-Hill, Sponsor)

The objective of this project was to determine the relationship between acupressure and the alteration of brain wave characteristics, if any. Acupressure is a traditional Chinese medicinal technique that involves the application of physical pressure on certain specific areas of the body to reduce pain and alter other physiological and psychological patterns. This alternative therapy utilizes the fundamental concept of energy meridian lines, invisible channels of energy between different parts of the body. Six participants (3 females, 3 males) between the ages of 19 and 23 were selected for this study. Various, specific acupressure points were manually stimulated on the body while recording an electroencephalogram (EEG). Acupressure points that were applied include UB-60 (outer ankle), T-5 (upper wrist), a false pressure point (near the base of the neck), GB-21 (shoulder), and LI-4 (hand). Although a slight correlation was found between changes in brain waves and acupressure techniques, the relationship was not concrete. The results were inconclusive primarily due to a small sample size.

6.01.07, “Community and Individuality in Medical Practice”

[Conference Paper]

Dylan Sander (Dr. James Bell, Sponsor)

This problem suggests that there are differences between obligations to yourself and to your community. That sometimes when the community believes something to be good, you may see it as bad; or that sometimes something good for you can also be good for the community, and vice versa. This belief can be applied to the medical field in practice and in research. Many people view some things that happen in medical research such as stem cells, and in medical practice such as abortion as bad while other people do not have problems with them. As individuals, we have to see where we fit in our beliefs inside of the community and find where we fit inside of the community with our beliefs.