

Razor's Edge Research Scholars Program: Reflective Portfolio

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Abstract

The purpose for this portfolio is to create a document that contains experiences that have furthered my personal understanding of research. These experiences can be from any aspect of the college experience, not limited to in class opportunities. The reason for creating this comprehensive document is to provide a way to reflect upon each semester as my understanding of research grows. As I continue to expand my knowledge of research, my portfolio will expand along with me and, by the time of graduation, I will be able to see my personal growth and reflection upon my journey.

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Statement of Goals

Fall 2016 Goals

- 1) Further my understanding on the process of how research is conducted.
- 2) Get no lower than an 85% on any of my biology tests.
- 3) Push my myself to challenge my viewpoints and pre-conceived notions in my psychology history and theories class.

Winter 2017 Goals

- 1) Successfully complete the university based research project and understand how to implement in class learning to the research project.
- 2) Integrate the learning from chemistry class with the laboratory experiments to gain a complete understanding of the labs being conducted.
- 3) Work with the treasury department for club sports to obtain warm-ups for the club volleyball team.

Highlighted Experiences

Fall 2016 Experiences

- **Razor 1000R**

- One experience that impacted my view of research was the presentation on “What is Science?” in the Razor 1000R class. The presentation focused on what qualifies something as “science” and how that can impact research. During the experience I was confused as to what Dr. Mills and Dr. Hecht meant. Everyone knew what science was, we’ve been conditioned about the scientific process ever since grade school. The further into the presentation, the more apprehensive I become about my viewpoint of science. I probably felt this way because they were challenging something that I had never questioned before, I believed that I knew what science was yet they pushed me further to analyze my perception of science. This in-class experience greatly challenged my view on research. Prior to considering “what qualifies science”, I never truly questioned previously conducted research or the paradigms of what is truly researchable. Before this experience I thought that if something could fit into the scientific method and could yield data than it was researchable. However, this experience taught me that science is more refined than my previous generalization. Science is conducting experiments for a purpose that can yield useful data and create a meaningful conclusion. My viewpoint of science is now more like that of the philosopher Popper. Popper (2003) states that science needs to be falsifiable (has to be able to be proven wrong) and within the realm of

the physical world. I will incorporate my new view of science as I progress into research. It will affect the way I question previously conducted research as well as research areas that my peers as well as myself propose.

- **On-Campus Event**

- One on-campus event that changed my perception of research was completing a personality assessment conducted by the Office of Career Development. A representative from the Office of Career Development came into my university seminar and performed a personality assessment for each student. The assessment asked about certain ways we make decisions, how we spend our time, and which aspects of our lives make us happiest. I was not anticipating gaining a new perspective on research but taking the personality assessment and receiving my results piqued my interest. I began to question the validity of the tests and possible sources of error as well as if these results were scientifically based. After the experience, I reflected on my inquiries. I began to question other aspects of research that are considered more of a "social science" and not "hard science". I also began to think of other ways to derive the same information the personality assessments were measuring but in a more scientific manner. This experience made me realize that there are more areas to research than my previous perception of research. I had been focused on the areas of science that is geared towards medical research while areas such as psychology had never crossed my mind. This experience is something that I greatly cherish from this semester. It opened my eyes to the world of research beyond that of the specific scope that I had previously focused on. I will

carry this open mindedness and consideration of different areas and aspects of research as I continue on my journey as a researcher.

- **Experience of My Choosing**

- An experience that has greatly impacted my view of research is the term paper that I was required to write for my class of History and Theory of Psychology. The term paper was required to be written on a psychologist that we had studied in the class. It was meant to include the background of the psychologist, his theories, and the influence of the theories that the psychologist produced in the field of psychology. The term paper was, in essence, a research paper on one of the psychologists that we had studied. I chose to write my paper on William James, who is known as the father of American psychology. Prior to writing this paper, I did not believe it would affect my views on research. I have written many research papers in high school, some being very extensive, but I had never written one using only peer reviewed articles. Through the use of strictly peer reviewed articles, it opened my eyes to how few documents are peer reviewed that I would have liked to use as a source. In essence, it changed my perception about the sources I have been using to write papers. I had been using any source that I deemed useful and generally unbiased for research papers as well as general assignments. This experience made me realize that using credible sources is necessary when researching topics because it creates a better more accurate paper and knowledge of the subject being discussed. I will carry this apprehension towards non-credited sources forward as I begin to conduct my own research. I now understand that when I would like to gain information in

the area of intended research; I should be very careful on the sources I read and allow to influence my research.

Artifact Collection

Fall 2016 Artifacts

- Razor 1000R – Midterm Question 1

Question 1 – Science versus Non-Science

People tend to blindly trust science because as a society we confuse science as the absolute truth. For example, I can make any statement but if I preceded it with “in a scientific study” or “according to researchers”, the majority of the population will take that statement as the truth without questioning the validity of the statement that was made. Science is a field that curtails a preconceived notion that has been engrained in the population since the earliest years of schooling - science is the way we prove things to be true. Which is true, but to an extent. However, what exactly is science? What qualifies something as scientific versus non-scientific? My opinion on this fine distinction between the two follows the Popperian viewpoint that is outlined in the novel “Theory and Reality”.

In my opinion, science is how we explain the world around us through the collection of physical evidence or data that supports the explanation that was made. Now this evidence or data can either be empirical and collected through a series of replicable experiments or collected through astute observations that can also be verified through replication. I also believe that science is not the absolute truth and at best is a theory with ongoing revisions. My viewpoint on what qualifies science overlaps with the perspective of Popper as outlined by the novel “Theory and Reality”. Poppers theory on science is best known as Falsificationism. Falsificationism is defined as: “a hypothesis is scientific if and only if it has the potential to be refuted by some possible observation.” (Godfrey-Smith, 2003, pg.

508). He also believed that if a theory was not risky and agreed with every observation made then it was not truly scientific. I agree with Popper because, in my opinion, in order for something to qualify as science it has to be replicable and testable, and if a scientific theory cannot be disproven then it has to violate one of the two. If a theory conforms to every observation then it is most likely too broad which can lead to extrapolation of the findings. My opinion on what qualifies true-science is nearly identical to the viewpoint of Popper.

Due to the strict definition of true science, non-science is a very broad area. To me, non-science is anything that cannot be supported by evidence or data or attempts to explain something other than the natural world. For example, non-science includes religion, technology, or anything that is not testable. While I am a religious person I do not view my religion as a source of scientific information because none of the statements about our history or explanations of the world around us are testable or have the ability to be disproven. Technology is not science because science only makes theories about the world, it does not create truth or matter. Technology may be based on science but any form of technology itself is not science. While Popper did not have a theory or viewpoint on technology as a non-science as it did not exist in his time, he did have opinions on "pseudo-science" (Godfrey-Smith, 2003). For Popper it was simple, "pseudo-science" (Godfrey-Smith, 2003) was anything that was not falsifiable. If the "scientific" claim did have the ability to be disproven, then it simply was not science. I agree with this view because science attempts to explain the empirical world, but the key word is attempts.

Science is not the absolute truth because no amount of testing or experimentation can prove that it is the undeniable truth. Therefore, if something can't be proven false then it doesn't have the ability to be tested and in turn comes across as the absolute truth.

The distinction between science and non-science is something that as a society we tend to overlook. In the schooling system, science versus non-science is never a debate that is discussed and encouraged, instead it's thrown out the window and ignored because in order to have a standardized teaching across school systems of what science and non-science is there needs to be a clear distinction of two. Therefore school systems ignore the fact that something may not be science and in turn preaches that anything can be science as long as it is phrased in a "scientific manor", better known as the scientific method. No wonder people are confused as to what science and non-science is, they were never taught to analyze and challenge science is general. However, not the entire population is blind-sided by the fact science has a non-science aspect. The problem is, even with those who challenge if something is truly scientific or not, they do not have a general consensus on what qualifies science. In the end, it comes down to their opinion and what they believe, it's too subjective. Therefore, the distinction between science and non-science can become hairy and confusing even to those who do try and draw a line between the two. While many people have a clear understanding of what science is to them it can often become mixed with emotional factors and preconceived notions. For example,

if a scientific theory contradicts an individual's personal religious beliefs then they tend to disagree and consider it non-scientific or untrue.

Science and non-science has an aspect of subjectivity which can lead people to be confused when they try to distinguish between them. To me, science is simply anything in the natural world that can be proven false through the collection of evidence through replicable experiments or observations. Non-science is the antithesis, anything that cannot be proven false through data collection or attempts to explain the supernatural. My viewpoint directly correlates with Popper and his theory of Falsificationism. However, my viewpoint is exactly that, it is my opinion and like science it is not the absolute truth. No matter how hard we try, the confusion between science and non-science will always exist because people will always have opinions. However, science is like concrete, it may break and get removed but something new will always replace it because science is the infrastructure and future of our society.

Resources

Godfrey-Smith, P. (2003). *Theory and Reality: An Introduction to the philosophy of science*. Chicago: University of Chicago Press.

- **On Campus Event – Personality Paper**

Personality Paper

Personality assessments can help people on their road to self-discovery and guidance in their life decisions. Personality tests normally identify what characteristics a person possess' and how those personality traits can effect relationships as well as possible optimal job opportunities. The Tieger Assessment and the Big Five Personality Test are both personality tests that have personally yielded eye opening information on my characteristics and traits.

The Tieger Assessment identified me as extroverted, intuitive, someone who makes decisions based on emotions, with a judging approach to life. Each of these findings attributes certain characteristics to my personality. As an extrovert, I like being in social situations and interacting with those around me, suggesting that I have a career and field of study that lets me interact with others and allows me to surround myself with those who share similar interests. The test also stated that by being intuitive I rely on my "sixth sense", the unseen connections in life, which indicates that I would thrive at a job that would allow me to make personal connections with others that have meaning to them. As someone who makes decisions based on feelings, personal values and beliefs, I think about others and how my decisions would impact them. This means that in my job I would thrive in an atmosphere that promotes personal connections as well as gives me a sense of accomplishment and allows me to make my own decisions. However, due to approaching life in a judging manner, I also like some structure and recognition of work. In all, a job that would best suite me is one that allows me to interact with

others and make personal connections that mean something, while my work environment recognizes hard work. I mostly agree with the results the assessment yielded. I do make decisions based on my own moral code and I do crave the feeling of creating an impact on people but I don't make all decisions based on the bigger picture, I do also consider the specifics of a situation.

The Big Five Personality Test stated similar results as the Tieger Assessment. It found that I am moderately open to experiences, highly conscientious, highly extraverted, highly agreeable, and low in neuroticism. Basically it states that I think in somewhat abstract ways (open to experience), I am very cautious but orderly and dependable (conscientious), I derive my energy from interacting with people (extraverted), I am kind and sensitive as well as cooperative (agreeableness), and I am also carefree and optimistic and self-confident (low neuroticism). These results suggest that I should have a career and job that allows me interact with people in a way that allows me some personal freedom. However, I do crave structure and verification but I will also voice my opinion when I feel it is necessary. A potential job might be a TV personality or criminal judge. This assessment suggests that I crave relationships that allow me to be more dominant but also allow for a very personal connection. This tells me that I should be careful in how I interact with others, that I don't overpower situations and allow others to voice their opinions. I mostly agree with these results as well. I do tend to be very extraverted and orderly but I am not as agreeable as the test indicates. On most issues, I will cooperate and work well in a team but I also voice my opinion which sometimes does not work well in groups.

Personality assessments can create perspective for people. Perspective on themselves and how they interact in the world around them as well as how others perceive them. Both the Tieger Assessment and the Big Five Personality Test say that I derive my energy from others, I am generally easy going but I will also voice my opinion and stick to who I believe I am. This assignment has helped me gain a better sense of self and a better understand what I need from relationships as well as a job.

- **Experience of My Choosing – Term Paper**

Abstract

This paper discusses William James, including his philosophy, theory, outlook on psychology, as well as biographical details. William James was a pragmatist that lived during the US functionalism period, a time in which psychology in the United States was now a combination of the sciences with a focus on practicality. James thought that all aspects of human nature should be studied with no limitations by scientific studies. His viewpoint and subsequent theories became so revolutionary that he is credited with having a large influence on the field of functionalistic psychology as a whole. His theories included topics such as habits and instincts, the self and self-esteem, free will, and the James- Lange theory of emotion, a theory that is still relevant today. While not all of James' theories were influential, his outlook and approach to psychology is how he created a lasting impact on the field and earned the title of father of American psychology.

William James led an interesting life that guided him to the field of psychology almost accidentally. However, once he arrived in the field he proved very influential and successful. James offered the first class in psychology in America and is credited with bringing and popularizing psychology in the United States. As a psychologist, James created many theories that greatly influenced the field of functionalistic psychology, as well as other psychologists. Through evaluating the life and theories of William James and how they impacted the field of psychology, we can understand why he is revered as the Father of American Psychology.

William James was born to Henry James Senior in January of 1842 in the Astor House Hotel in New York City (Ivie, 2006) and died on August 26, 1910 in Chocorua, New Hampshire. James had one sibling, a brother named Henry that was born fourteen months after his birth (Ivie,2006). The James family must have had a wealthy background because their father was able to send the two brothers to very wealthy and esteemed private schools in the United States as well as Europe (Ivie, 2006). The James family also frequently traveled in England, France, Switzerland, and Germany having tutors that furthered their education when traveling (Ivie,2006). With such a diverse background in travel and world experience, James was exposed to various cultures and educational experiences growing up, giving him a different type of education that many people aren't exposed to at such a young age. When James was younger and deciding on what to pursue in his life, he decided to become an artist. After studying with artists in Rhode Island, James realized he would never be able to make it as an artist. Therefore, at the age of 19 James enrolled in Harvard University and studied Chemistry for a short period before he shifted his focus to the school of medicine where he studied physiology and anatomy. In 1865, James attended an expedition to the Amazon River where he collected biology specimens, however after returning he decided that collecting specimens wasn't for him. In 1869 James received his medical degree even though he had very little interest in medicine; this is the only degree James every received. After graduation, James felt lost and still didn't know where he was going to make his living. At this point in James' life he was really struggling on trying to earn a living. However, soon Charles Eliot, the newly appointed Harvard President, extended a position of professor of physiology to

James. As a professor James was able to develop many theories that become quite innovative. In 1875 James taught the very first course in psychology that was offered at an American College (Ivie,2006). His course became the turning point for his career and his life. His class on psychology became so popular a publisher, Henry Holt, extended a contract to him to create a textbook on psychology (Ivie,2006). The textbooks were published twelve years later and were an instant success, shooting James into a reputation of an esteemed scholar on a subject that he never received a degree in. His volumes on the subject were later created and published as textbooks, ones that were used in psychology classes for many years. James' theories were seen as so influential partially due to the time period in which he lived. The US renaissance period, the period before James' life, was known for its focus on "hard" empirical science that had little focus on topics that couldn't be studied through experiments or were incapable of yielding data. James' theories extended past these limitations. He believed that all aspects of human nature should be studied, not just those that can yield data. His pragmatic viewpoint reflects the US functionalism period in which he lived. This time period combined the hard science aspect with a focus on the practicality aspect of psychology as well.

The theories that William James proposed generally reflected the practicality aspect of the US functionalism period. His approach to psychology was very apparent in the theories he produced. His theories are focused on habits and instincts, the self and self-esteem, free will and the James-Lange theory of emotion. Through analysis and understanding of each his theories you can see how they were impactful on the field of psychology. His theory on habits and instincts states that instincts rely on

behavior and are blind while habits are learned behaviors (Suplizio, 2007). James believed that you could shape and change habits because they were learned in nature. He believed habits were changeable by removing one's self from a situation that encouraged the bad behavior, that one shouldn't contradict the good behavior, and that a change in bad habit should occur immediately and not gradually over time (Suplizio,2007). James also believed that instincts were the starting point for our education and could become motivation (Ivie,2006). This reflects the practicality aspect of psychology at the time by suggesting a theory he created could change human behavior. He also theorized that instincts were generally innate while habits were changeable and flexible, introducing the practical use of psychology in its ability to shape these habits (Suplizio,2007).

James' theory on self and self-esteem also reflects his viewpoint of practicality. He viewed that our "self" is every aspect of us and can be divided into different "self's (Sargent, Crocker, & Luhtanen, 2001). The material self-consisted of everything that one owned such as clothing or books while the social self is the perception of others on the individual. The social self is also dependent on who is perceiving the individual. For example, the social self that one's friends know can be different than the social self that one's parents or teachers know. Finally, the spiritual self consists of one's conscious and emotions as well as the idea that they are accepted and loved by God or other spiritual beliefs (Sargent, Crocker, & Luhtanen, 2001). Each of these "self's can change and are not fixed, just like one's self-esteem. James theorized that one's self-esteem is dependent on a ratio of feeling good about one's self compared to feeling bad about one's self. It can basically be interpreted as

the amount of things the individual attempts over the amount of things the individual attempts and in turn succeeds. James stated that in order to increase self-esteem, someone could either simply succeed more often or attempt fewer things (Ivie,2006). Another way that James approached the differences from person to person was their personality type. James believed that there are two distinct types and styles of thinking, tender-minded and tough-minded (Mitroff, 2004). The tender-minded individual, according to James, tends to think in a more optimistic, religious, and rational way while the tough-minded individual tends to think more in a manner that is fact-oriented, pessimistic, and materialistic way (Mitroff, 2004). The idea that individuals think in different manners was radically new and previously unconsidered before his time. While personality typing was fairly new, the question of the interaction between the mind and the body is a century old problem. According to James there are only three ways that the brain and mind can interact as outlined in his transmission theory of mind/brain interaction (Hall, 1996). The first possibility of interaction is that there was no interaction, without the brain there is no mind. The second and third possibilities are variations of the brain transmitting creations of the mind. The second possibility hypothesizes that the brain funnels mind creations and focuses them into a particular point in time and space (Hall, 1996). The third process of interaction is the brain "focusing a section of the mind in time and space" (Hall, 1996). James thought that evaluating the observations of the relationship between the mind and brain could only happen two ways. He believed that a change in mind was linked to a change in the brain and we could create a change in the brain through something like surgery and then observe a change in the mind (Hall, 1996).

While each theory discussed so far has had an impact on psychology, the one with the most influence is the James-Lange Theory of Emotion. The James-Lange theory states that “bodily changes follow directly the perception of an exciting fact...then our feeling of the same changes as they occur is the emotion” (Palenick,2007). The first half of the statement describes the conditions that cause the emotion(s) to occur while the second half of the statement describes the nature of the emotion (Palencik,2007). Basically, the theory states that we perceive (take in outside stimuli), act (the physical response), and then feel (the emotional response). This idea was so revolutionary because it was previously believed that we perceive, feel, and then act. James was suggesting that we do not have control of our emotions but instead they are dependent on our behavior. This meant that someone could control their emotions through changing their behavior. This was also revolutionary because it suggested that we don't have as much control of our actions as we previously thought. Instead, our actions are based more upon on what we perceive, thus discrediting the amount of free will people have over their emotions. James shared credit for this theory because the Danish psychologist Carl Lange independently developed this theory as well (Palencik, 2007). Together, their theory of emotion sparked a new perception of emotion throughout psychology. However, while James' theory of emotion was influential, it was not his only theory to cause a change in perception.

Due to the revolutionary nature of William James' theories they created an impact on the field of psychology. However, the greatest influences of William James' theories and outlook can be seen in the field of functionalistic psychology (Ryan,

2008). James was a pragmatist and thought that all aspects of human nature should be studied, as stated before. This concept is apparent in the field of functionalistic psychology (Ivie, 2006). Functionalistic psychologists believe that psychology is a practical science that should use various methods to study psychology as well as study mental process and behavior even though it can be difficult to yield data. His theories of habits and instincts, emotion, and the self can all be seen in the unified themes of functionalistic psychology. James' theory of habits and instincts correlates to the theme of motivation and process because the theory attempts to explain aspects of human nature and how some are innate while others are seemingly learned. The functionalistic psychologists attempted to explain the mind and what might occur in the mind that would produce behavior. James' theory of emotion shed light on how perception and action might impact the mind and emotions produced. The theory of self can be found in the theme of the study of motivation, mental process, as well as the emphasis on individual differences over similarities. Even his theory of tender-minded versus tough-minded personalities is found in the theme of motivation behind behavior (Mitroff, 2004). His theory stated that there are two personality types; tender minded personalities are more rational and optimistic while tough-minded people are more materialistic and pessimistic. His attempts to explain personalities can be seen as an attempt to explain why people tend to act in the manner they do. Functionalistic psychologists are opposed to the breakdown of the consciousness into small pieces. James also frowned upon the attempt to break down the consciousness. He believed that we cannot fully explain the consciousness through scrutiny of tiny aspects but instead by focusing on the conscious as a whole,

for example he thought that breaking down the conscious into tiny parts was “like focusing on only a small spectrum of visible light, it gives you an idea but doesn’t allow you to see the full picture” (Ryan,2008).

While James’ theories are very apparent in the field of functionalistic psychology, his impact can also be seen in other psychologists (lvie, 2006). For example, Robert Sessions Woodworth who was a student of James, is credited with influencing eclectic psychology and dynamic psychology. Eclectic psychology is open to all ideas regardless of their source, which is an idea of James’ that was taken to the next level. James believed everything should be studied regardless if it can be proven scientifically or not, and Woodworth took this idea and extended it to say that any idea should be considered in spite of source not limiting it to the area of study. Woodsworth also is credited with dynamic psychology, where the attempt is to explain why people do what they do. Many of James’ theories attempt to explain some aspects of behavior, such as the theory of emotion as well as habits and instincts. Woodsworth took James’ perspective on psychology and extended the openness of study even further.

Another psychologist that William James had impacted was Edward Thorndike. Thorndike was also a student of James and was the first to use non-human animals as test subjects. While James obviously never used animals, he did promote unconventional thought and various methods to research topics.

The outlook James created also impacted the psychologist James Dewey. Dewey theorized that behavior occurred in a stream and cannot be divided for study because it worked as a whole. This is reflective of James’ view of conscious and the

overarching perspective that not all things can be studied through harsh examination of individual parts. While James' theories themselves were only slightly influential individually, his lasting impact came from his new and different perspective on psychological topics. He pushed the boundaries and addressed different topics that had been previously ignored or had been thought of in a specific way for many centuries. The only theory that is still considered relevant today is the James-Lange theory of emotion. It is not generally accepted to be true, but it still has a lasting impact on how we view behavior.

William James was a man that stemmed from a very unconventional background. Raised as someone with great access to education and vast travel experience, he was able to acquire a sense of various cultures and interactions of humans. I believe his childhood experiences and medical training greatly impacted his theories and outlook. His theories on free will, habits, instincts, and the self and self-esteem never created a larger impact than on the field of functionalistic psychology, and most of them eventually fell by the way side. Although, the James-Lange theory of emotion survived and became the basis of many theories to come. William James extended his impact on psychology by introducing the idea that every aspect of human nature can be and should be studied, not only the aspects that can be empirically proven. However, his lasting legacy on the field of psychology is how he introduced psychology to the United States, earning him the title of father of American psychology.

References

- Hall, J.A. (1996). William James on Consciousness Beyond the Margin. *The Journal of Parapsychology*, 60(4), 361-362.
- Ivie, S. D. (2006). The legacy of William James. *Journal of Thought*, 41(4), 117-136,167.
- Mitroff, I. I. (2004). William James and A Theory Of Thinking. *JITTA : Journal of Information Technology Theory and Application*, 6(2), 83-89.
- Palencik, J. T. (2007). William James and the psychology of emotion: From 1884 to the present. *Charles S.Peirce Society. Transactions of the Charles S.Peirce Society*, 43(4), 769-786.
- Ryan, M. B., PhD. (2008). The Transpersonal William James. *Journal of Transpersonal Psychology*, 40(1), 20-40.
- Sargent, J.T.,Crocker,J., & Luhtanen, R.K. (2006). Contingencies of Self-Worth and Depressive Symptoms in College Students. *Journal of Social and Clinical Psychology*, 25(6), 628-646.
- Suplizio, J. (2007). On the significance of William James to a contemporary doctrine of evolutionary psychology. *Human Studies*, 30(4), 357-375.

Reflections

Fall 2016 Reflection

- The first semester of college began with an apprehension and worried me. I was engrossed in school work and homework worried that even the slightest misstep would cause a rift in my grades. However, looking back I realize how unnecessary my woes were. My final thoughts of the semester are that school is the reason that I am attending college but that is not the entirety of the college experience. I now realize that leaving my dorm room and having fun is a very necessary aspect of my new found life. I have learned this semester that setting priorities is crucial but incorporating every aspect of my life on the list of priorities is even more crucial to my happiness and success as a college student. I have also learned that college is not as challenging as I previously thought and I have more free time to do things that I enjoy. I have also come to the conclusion that the key to success in the classroom is becoming a good test taker. College relies on testing to create grades and weighs testing the most out of any other category when computing the final score of a class. While these are all things that I have grown to know as a college student, I have also grown to know and foster the inner researcher in me. This semester has caused me to grow greatly as a researcher. Prior to college, my research included high school labs and any personal inquires that I would find interesting. This semester has allowed me to hone the skills that I have learned throughout life and apply those skills in a manner conducive to research. I have grown to understand how research should be properly researched prior to any investigation on the topic. I now understand that an investigation into conducted and published research is necessary

because there is a vast amount of published research that is skewed. As a researcher, I have grown to understand that not all science should naturally be accepted as the truth. In all, this semester has transformed me from someone who has had a natural propensity and curiosity for research into someone who has the knowledge to become a proper researcher.