

Reflective Essay

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From a young age, I have been passionate about science and interested in research. Throughout elementary school and high school, I would always be asking “why” and questioning different things I observed happening in our world. This curiosity led me to conduct several self directed research projects. One example of these projects was testing the effect of covering outdoor swimming pools and how this affected water and heat loss. After completing my various experiments, I would often create a poster board with my findings and present my discoveries at the Kamloops Region Science Fair. This was my introduction to research and I enjoyed developing simple experiments to understand complex problems.

When I joined Thompson Rivers University, I decided I wanted to complete a Bachelor of Science. I have always been passionate about science and pursuing a career in medicine and/or medical research. However, my first year at TRU was conducted online due to the COVID-19 pandemic. This made adjusting to university difficult and it also was challenging to find opportunities to do research. Additionally, in many of my classes, we would discuss noteworthy research discoveries such as the ones people hear about on the news. A particular interest for me was research such as Nobel Prizes are monumental scientific advancements that are very complex and take years to accomplish. This was quite intimidating for me as I realized that the formal research process was still unfamiliar to me despite my years of experience.

In my second year, I had the opportunity to take Introductory Analytical Chemistry with Dr. Kingsley Donkor. In this course we discussed the principles of analytical chemistry and their practical application to solution samples. This course also included a laboratory component which was one of my

first opportunities to conduct experiments in a laboratory setting. This was a perfect introduction to chemistry research and part way through the semester I began talking to Dr. Donkor about joining his laboratory group and conducting research with him. Since then I have been able to complete a UREAP project and am planning on defending my honours thesis for Chemical Biology in April. I have also extended my research to biology by completing a Directed Studies in Biology which focused on comparing biofilm specific genes in bacteria living in different habitats..

Participating in research activities has significantly changed my way of thinking and communicating. In scientific research, being curious and inquisitive is important to be able to find questions to answer. However, as much as I would like to answer all the questions and find explanations for everything, I realized that this is not feasible for my research. Therefore, I have learned that it is equally important to be able to focus those ideas in order to develop a research question and experiments to address that question. Another important change in my way of thinking is regarding experimental observations and analysis. When conducting experiments, it is easy to observe changes, to take note of them, and to wonder why those changes occurred. However, I have learned that great researchers are always thinking ahead and developing theories or connections to other research or literature in order to provide an explanation for what is occurring. I have also realized that one of the most important parts of research is communicating the results. Personally, I always really enjoyed developing and conducting experiments to do in the laboratory. However, I have learned that a significant part of what makes research important is the impact it can have on other people. In order for this to happen, the researcher has to be able to present their findings and results so that everyone can understand it. This has changed my thoughts and perspective on the presentation of my research. I have realized that presenting research is dynamic and needs to be adapted depending on who you are talking to and their level of understanding of the topic you are discussing.

I believe my research activities are important because of how they have allowed me to develop personally and how they have impacted the field of study. As mentioned previously, participating in research activities has shifted my way of thinking and communicating. My research activities are also important because they connect many of the courses and concepts I have learned while studying at TRU. Before participating in research, it seemed like many of the courses and concepts I was learning were unrelated to each other. However, when participating in research you draw upon topics learned in all of the courses which connects and draws together my learning experience at TRU. I also believe that my research activities are important because they are improving and adding to the field of study. For example, my honours research focused on developing a novel method for detecting and quantifying carotenoids in crustacean samples. Currently there is little to no research or literature that is able to do this so it will significantly impact and improve this field of study.

Overall, my research activities and experiences have allowed me to develop my learning and communication abilities as well as technical laboratory skills that will continue to have benefits in my future. As mentioned previously, my goal is to pursue a career in medicine and/or medical research. My experiences with research will give me a head start towards my future and I am excited to see what research experiences lie ahead.