

Reflective Essay

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Introduction

The knowledge and experience gained from my academic career at Old Dominion University have been instrumental in creating a solid foundation for cybersecurity. Throughout my studies, I developed various hard and soft skills, including proficiency in Linux and Python, as well as time management, communication, problem-solving, and critical thinking skills. The ODU cybersecurity program covers a range of interdisciplinary subjects that have deepened my understanding of the field. Among the most impactful courses were Cyber Ethics, which explored the relationship between law and cybersecurity; Cyber Terrorism, which examined the connections between history, science, and technology to explain terrorist behavior; and the Cybersecurity Internship course, where I was able to reflect on my full-time job and consider how it has contributed to my success in this field. Furthermore, creating my ePortfolio allowed me to reflect more deeply on my coursework, helping me to understand overarching themes, including critical thinking, problem-solving, and communication, and their greater impact.

ODU Cybersecurity IDS Program

The Interdisciplinary Studies program at ODU offers a unique approach to learning by integrating insights from various disciplines to provide a holistic perspective on complex cybersecurity issues. This multifaceted approach combines knowledge from fields such as history, social science, psychology, computer science, and English, allowing for a deeper understanding of intricate discussions and solutions. By blending these areas, the IDS program helps students view cybersecurity from multiple angles, preparing them for the dynamic and interconnected nature of the field. The exposure to various disciplines enables students to develop critical thinking skills, ethical awareness, and technical knowledge, all of which are

essential in cybersecurity. Through this unique curriculum, I've been able to form a balanced perspective that is critical for addressing today's cyber challenges.

To complete their degrees, ODU requires cybersecurity students to take specific interdisciplinary classes, including Cyber Law, Cyber Technology, Science and Society, and Interdisciplinary Theory. These courses draw from multiple disciplines to foster meaningful discussions and thought-provoking papers. In Cyber Law, for example, I examined how legal frameworks interact with technology, exploring ethical questions that cybersecurity professionals often face. The Interdisciplinary Theory course encouraged me to look at complex issues from different viewpoints, highlighting the importance of holistic problem-solving. The program aims to move beyond the traditional single-discipline approach to learning, encouraging students to integrate various areas of study to address complex challenges in the industry.

In addition to the required interdisciplinary courses, all cybersecurity students have a requirement to complete an internship or complete an entrepreneurial senior project. Both options allow students to use the interdisciplinary skills they've learned throughout the degree program to excel in real-world applications of their acquired knowledge. The internship requirement is designed to bridge academic learning with hands-on experience, enabling students to gain insights into the demands of the cybersecurity workforce. I chose to take the internship course because I am already working full-time as a cybersecurity analyst. This course has allowed me to reflect on my experience with the job, understand how ODU's curriculum has prepared me, identify areas of improvement, and evaluate my performance in the position.

Through this reflection, I can see how my interdisciplinary studies have equipped me with problem-solving and analytical skills that I apply daily in my current position.

Critical Thinking

Throughout all of my cyber and interdisciplinary courses, I have had to develop profound critical thinking skills to complete assignments correctly and to articulate my thoughts clearly and effectively. For example, in my Cyber Ethics course, I had to research complex, controversial areas of discussion related to technology and society. In this course, I had to complete papers to support my arguments on various issues affecting the cybersecurity landscape, including privacy and cybersecurity, the balance between technology usability versus security, and various regulations supporting cybersecurity protections. I spent a lot of time understanding the social implications of these issues and combined research from multiple disciplines to form my argument. This effort to develop and articulate my arguments effectively required lots of critical thinking to think outside conventional approaches and develop holistic viewpoints.

Additionally, in my Cyber Terrorism course, I spent a lot of time researching the psychology behind terrorist motives and understanding regulations concerning terrorism, as well as the subjectiveness of the terrorism definition. We explored how psychological factors, cultural influences, and historical context contribute to the motivations behind terrorist actions, which gave me a more nuanced perspective on this challenging topic. It required me to think critically to identify and gather supporting evidence among these disciplines and combine them in a way that tied all the information together into complex papers. I also had to evaluate case studies, examining how different countries classify and respond to terrorism, which highlighted the variations in legal and ethical frameworks. This course not only deepened my research skills but

also taught me how to approach sensitive subjects with an open mind and consider multiple perspectives.

The level of critical thinking I have developed has broadened my perspective in many areas, allowing me to utilize multiple resources to tackle complex issues. This transition from a narrow viewpoint to a more holistic approach has been incredibly beneficial for my career. Now, I'm able to approach unfamiliar tasks with greater confidence, knowing I can break down the problem and look at it from different angles. In my line of work, I frequently encounter tasks that are unfamiliar to me, requiring innovative thinking to accurately comprehend and resolve challenges. Due to the critical thinking skills I gained during my experience at ODU, I now draw from various fields of knowledge to understand the root causes of complex issues and identify the most effective solutions on the job. This skill has helped me become a more adaptable professional, better equipped to handle unexpected problems.

Problem Solving

In addition to critical thinking, there have been several instances in all of my cybersecurity courses that required proficient problem-solving abilities. Oftentimes, my courses required me to use those critical thinking skills to come up with unconventional approaches to complete my assignments. For example, in my Python programming class, the teacher tasked all the students to develop a term project to include a code that incorporated the various subjects we learned throughout the semester. During this effort, one of my functions was not working properly which affected the rest of the code, causing the program to generate errors. I had to investigate the issue to determine the source of the problem, how it affected the rest of the code, solutions to fix the error, and how to test my resolution. I went through these problem-solving

sequences to successfully troubleshoot my code, and after lots of research and troubleshooting, I was able to run my code successfully.

This problem-solving ability has allowed me to develop personally by allowing me to become more patient and at ease when problems arise. I used to get very stressed out when something did not work out as intended. However, after being faced with complex issues in some of my cyber classes while completing assignments and projects, I realized that problems are inevitable and that it is best to remain calm and simply work through resolution steps to remediate the issue. I now understand that it takes time to work through issues successfully and that problems are not inherently negative. They allow you to grow by recognizing potential shortcomings and allow you the opportunity to be innovative to solve the issue and recognize areas of improvement for the future.

Communication

Lastly, my courses at ODU have taught me the importance of communication and collaboration. All of my classes have required me to interact with fellow peers and professors in varying ways, including group projects, discussion board posts, and classroom presentations. Before starting my academic career, I did not envision the cybersecurity program to encompass the high level of communication that it has. I thought that ODU's program would be more technical, and although various classes were standard technical subjects, all of my classes required extensive communication for assignments and succeeding in the courses. For example, my Linux Fundamentals course, which I thought would be strictly technical, required classroom discussions where each student would actively participate and offer additional insights to fellow peers. In addition, many of my cyber projects required group projects that require leadership skills to designate responsibilities, time management skills to complete the project within the

required timeframe, and communication skills to work with other students, ensuring that each student has a voice and contributes equally to an effort.

EPortfolio Requirements and Reflections

As a part of the interdisciplinary requirements, ODU requires all students to submit an ePortfolio that serves as a digital showcase of a student's academic and professional career. These ePortfolios represent how an individual is as a student and showcase their strengths and talents by including various artifacts, often completed projects, resumes, and general coursework, in an organized fashion. EPortfolios are beneficial for a multitude of reasons. In my experience, my ePortfolio will serve as an insightful tool to expand upon the skills and strengths listed in my resume and demonstrate those skills into tangible artifacts. I am also using my ePortfolio as a vessel for self-reflection to gauge my personal growth throughout my experience at ODU. By reviewing my artifacts, I can understand how my skills, such as writing and communication have developed over time, allowing that self-recognition to guide me for future growth to excel in my career.

I carefully selected my artifacts to comprehensively represent my work ethic. I chose a diverse range of items, including technical projects from my programming and Linux classes, as well as complex papers from interdisciplinary courses. Additionally, I included the certifications I have earned and my resume. I ensured that all the selected artifacts contained high-quality work to ensure that the hard-working representation of myself was maintained throughout the entirety of the ePortfolio.

The process of selecting and reviewing my artifacts was rewarding. I realized how much progress I have made since my freshman year. As I examined my older work from that time, I noticed that I did not have a thorough understanding of various cybersecurity topics that I now

grasp. Additionally, I recognized the improvement in my writing skills from my lower-level courses to my writing-intensive upper-level courses. My ePortfolio has allowed me to recognize the extent of personal and professional growth, especially within the last year.

Specifically, as I was completing my certifications section, I realized that I passed four certifications in the last year while working full-time, being a full-time student, and being actively involved in extracurriculars. This allowed me to understand further the level of ambition that I carry and my desire to channel that drive into my career to become successful. In my professional experience section of the ePortfolio, I include my internship term paper that outlines my experience working full-time as a cybersecurity analyst. Including this in my ePortfolio has allowed me to reflect on the professional development I've achieved in this position and all the invaluable knowledge I've gained that will transfer to future roles.

All the themes I have outlined, including critical thinking, problem-solving, and communication and collaboration are correlated to each artifact I have included in my ePortfolio as I outline the underlying importance of each assignment and state how the artifact is relevant to the greater impact on real-life cybersecurity implications.

Conclusion

Overall, my academic journey at Old Dominion University has provided a strong foundation in cybersecurity, equipping me with essential skills and knowledge to succeed in the field. The interdisciplinary courses allowed me to explore cybersecurity from multiple perspectives, enriching my understanding and ability to think critically about complex issues. Through my coursework and internship, I have not only gained practical skills but also a deeper appreciation for the ethical, historical, and social dimensions of cybersecurity. The experience of

creating my ePortfolio further solidified these insights, reinforcing the importance of critical thinking, problem-solving, and communication in my career.