

Reflection

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Introduction

To reflect is to critically analyze an experience, recording how it has impacted you and what you plan to do with your new knowledge (Cambridge University, 2015). I arrived at this institution in 2019 as a wide-eyed freshman eager to take on the world, and today, I sit here with all of the vital information and skills that I received throughout my time here that will carry me through the field of cybersecurity and my personal life. Over these past four years, I have encountered and overcome many challenges that tested my physical, mental, and emotional strength. My time at Old Dominion University has been an enlightening and truly fascinating experience especially when considering that I entered this school with no prior knowledge or experience in cybersecurity. I chose cybersecurity as my degree by chance and hence lacked faith in my ability to do well or even understand anything. However, after many hardships and tribulations, as well as hard effort, I was able to develop intangible and technical abilities that would appropriately qualify me for the field in which I wish to pursue a career. Heading into my final semester I have a 3.84 GPA and a 3.87 GPA specifically for my major, I was able to achieve these unexpected results due to three skills that proved to be integral to my success in the field. These skills were obtained through specific classes and course materials that gave me the knowledge and experience of the specific talent. The knowledge and experience gained in class were then expanded on through recreational use and practicing to finetune faults that appeared in my coursework. Learning to operate Linux, improved my writing skills, and learned how to operate different virtual machines.

Operating on Linux

To understand why the Linux Operating System was so integral for me to learn, there must be an understanding of what the Linux Operating System is and what role it plays in the cybersecurity community and industry. Linux is a free and open-source operating system (OS). An operating system is software that directly handles the hardware and resources of a system, such as the CPU, memory, and storage. The operating system (OS) lies between applications and hardware, connecting all your software to the actual resources that do the job (Red Hat, 2022). Obtaining this technical skill, put my foot through the door and allowed me to learn cyber skills such as coding, scripting, password cracking, auditing, putting up intrusion detection systems as well as firewalls, etc. I was put in simulations where I had to attack virtual machines using Attacker Kali Linux and then switch over to Internal Kali Linux to defend against that very same attack, I planted in the first place. In my field, I will be dealing with systems being hacked and dealing with hackers, some talented and some mediocre but they all come with different tendencies and different skills. That is why I needed to be able to understand how it felt to be on both sides and essentially run a self-targeted penetration test so I can at the very least know what it feels like to be the hacker. For my specific artifact I choose an assignment that required me to decrypt a file to find the key (password) then once the file had been decrypted, I was able to analyze the traffic within the file in the Linux terminal and Wireshark. My dream in my field is to be a penetration hacker, so conducting these activities both in class and recreationally gives me the right amount of knowledge, experience as well as comfort when I rise to the ranks to become a penetration hacker one day. The experience of this assignment was very challenging especially trying to create my file and trying to decrypt

it in the end I was able to do that and analyze the packets of the file. I believe an assignment like this is important because it can be desirable in the job market and can be labeled as a notable skill in a job application or allow me to reach a certain qualification that a job might have for me. My artifacts for this specific skill show the level of difficulty as the innate degree in a skill that I have gained since my time in completing this degree.

Writing and Interdisciplinarity

When I was in High School, my literature teacher told me something that seemed insignificant at that time but ended up being almost prophetic now that I harken back on it. She said, "In College, you will have to learn how to write in more than one way." At the time, it sounds almost foolish, I thought what she does "write in more than one way," and preceded to laugh it off. I continued with this train of thought until I took IDS 300W, which was arguably the biggest obstacle I had to overcome in my four years at this university. This is a common issue for a lot of college students, who may not be used to it. By interdisciplinary writing, I have in mind writing that "critically draw[s] upon two or more disciplines and . . . lead[s] to an integration of disciplinary insights" (Newell and Green, 24-25). For undergraduates to generate such writing is no simple task. It demands that the student understand critically the differing aims, assumptions, and tasks of two or more disciplines, while simultaneously possessing considerable proficiency in diverse forms of academic writing. Moreover, it calls for the development of a range of critical thinking skills fundamental to good writing and interdisciplinary inquiry: comprehension, application, analysis, synthesis, and evaluation (Haynes, 1996). I struggled and worked hard all semester to ensure that I succeeded in that class and in the end, I was thought a

lesson that to become a good writer, you write to your audience rather than forcing your ideals and writing style in your paper on your audience and expecting to get great results. All my time in grade school I was thought the five-paragraph formatted style of writing, in my IDS 300 writing-intensive class the teacher was not letting that format flat as it would not work for topics requiring interdisciplinary topics. However, I give credit to my professor for having patience with me and allowing me to restart and transition into becoming a more versatile writer. I had a very hard time writing in the style that my professor wanted, writing a research paper in his class required fulfilling ten steps. Which sounded like a nightmare to someone who only was writing the traditional five-paragraph, state your thesis in the introduction and formulate that as your body paragraph type of essay (Which is ironically what this paper is). However, in the lead-up to the final research paper, I continued to improve by pulling sources and insights and categorizing them by discipline as well as choosing the most relevant discipline to my research topic. One of my artifacts is my teacher commenting on my improvement in this new writing style I found myself requiring learning to get an A in the class. Now I have written papers in every style with general ease, or at least I do not struggle as nearly as much as I used to. In my field of cybersecurity, the ability to research will be integral when it comes to collecting data and on the policy side of cybersecurity as surprisingly there is a lot of writing in the field. The ability for me to write a research paper will do wonders for me. This ability also helped me put this electronic portfolio together as my problem has always been creativity and creating websites. Through this process, I tapped into a lot of the procedures that I did during my time in IDS 300W to complete this assignment to the best that I possibly could.

Through interdisciplinarity, I was able to look at electronic portfolios of every discipline and take positives from all of them and put them together for mine.

Operating Virtual Machines

A Virtual Machine is a computing resource that uses software instead of a physical computer to run programs and deploy apps. One or more virtual "guest" machines run on a physical "host" machine. Each virtual machine runs its operating system and functions separately from the other VMs, even when they are all running on the same host. This means that, for example, a virtual macOS virtual machine can run on a physical PC. In my opinion, I believe this is the most important skill I have gained in my time at university. The ability to operate on virtual machines allowed me to simulate using multiple operating systems at a time. Essentially simulating a real work environment where I am responsible for a plethora of many operating systems and machines such as laptops, desktops, and many other computing devices. Having this experience in my belt shows that on a day-to-day basis I will be able to handle operations that may require multiple devices. In the artifact, I shut down the internet connection between virtual machines such as Windows 7, Windows Vista, and Internal and External Kali and was able to discern which virtual machine was shut down through whether the traffic was pinging or not. This will allow the ability to check operating devices at the workplace with much ease and I know the code to

check for any disruption to traffic. This will prove integral with attacks such as Denial of Service and DNS Spoofing which are common attacks on companies within the field.

Conclusion

Reflection is important because it is an evaluation of everything a student has learned and what more could they learn as they continue to move up through the industry. Reflection is important in the growth and cultivation of skills; you cannot learn from prior mistakes without the ability to rightfully reflect on prior actions. Specifically, for the ePortfolio process, you are using the portfolio as a mirror image of your cybersecurity progress, and by reflecting through it, you will only gain more technical skills and go higher in the field. The reflective learning process of generating and developing a portfolio over time enriches student learning while also producing a dynamic product that makes learning apparent to any audience (Missouri Online, 2022). These three talents were critical to my advancement in cybersecurity because they provided me with personal experience that helped me to stand out in the profession. Writing and its interdisciplinary nature of it, enabled me to assess things on a more complicated level and improve my capacity to study themes. Each of these talents will easily help me blend into the business and will serve as a fantastic foundation for me to learn further information and skills as I continue to improve myself and be the best I can be since, at the end of the day, that is all I aspire for. To be the best version of myself in all elements of my life and this profession, I feel the same way, so I appreciate my teachers, the school staff, and everyone who supported me on the route to graduation and becoming the best student I could be.

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