Reflection Paper

Ritz Carr

Department of Interdisciplinary Studies, Old Dominion University

IDS 493: Electronic Portfolio Project

Dr. Virginia Tucker

October 6th, 2024

IDS 493: Reflection Paper

INTRODUCTION

This is it. I am nearly at the end of the road to my 3-and-a-half year college career. Creating an eportfolio not only has been reflective, but somehow… conclusive, almost. In their guide, "Portfolio Keeping: A Guide for Students" Nedra Reynolds and Elizabeth Davis coin Reflective Learning as "to think consciously or deliberately about how you learn best or what is most meaningful to you about what you've learned" (Davis & Reynolds, 2013). I would describe this process exactly as a reflective learning one. One where I have examined my coursework and derived three skills to provide a summation of my overall growth and learning throughout my time as an ODU student and cybercrime major. Skills such as writing and research, technical, and critical thinking have driven my path to success whilst providing me with enough challenge to stay intrigued by the surprising journey my major has provided me.

WRITING AND RESEARCH

Writing and research are imperative skills to the collegiate toolset, as the basis of any bachelorette program is to learn how to research. However, not everyone is a great researcher. To be a great researcher, 5 qualities are often sought after, as written by Elsevier Author Services: curiosity, analytical ability and foresight, determination, collaboration, and communication (Elsevier, n.d.). I would agree that these qualities are ones I believe make a great researcher as I know I have built upon these in my college career.

Many classes helped me grow this skill; however, I would attest my growth in writing mostly to three classes: CRJS 497, an independent studies course in criminal justice; CYSE 368, a cybersecurity internship course; and SOC 337, a course in sociology research methods. In each of these classes I produced an end-product paper that accumulated the entirety of my learning.

CRJS 497 INDEPENDENT STUDIES IN CRIMINAL JUSTICE - SCOPE NARROWING AND LEGAL WRITING

In CRJS 947, I was an observer in a lower-level class, CRJS 220, Law and the Criminal justice system, tasked with producing a research paper on any topics covered in the course. I already had an interest in the Fourth Amendment as did my professor, so I selected this as my scope. This paper, like previous papers, tested my research scoping capabilities. I used to spend a lot of time narrowing scope in an efficient manner: coming up with a research question and going straight to writing without narrowing down the scope. This time, I narrowed down from the beginning: implications of technology on the Fourth Amendment's Reasonable Expectation

of Privacy (REP) clause. In addition to learning how to narrow my research scope, this paper really helped me grasping a legal writing/citation style. It is a battle of learning to write concisely, but also being able to explain thoroughly the 'case' and its analysis. I hope to use these skills to possibly prepare me for law school.

CYSE 368: CYBERSECURITY INTERNSHIP – LITERATURE DEFINITIONS

Nearly all research papers I write now have a definitions section. I learned this in my internship for my CYSE 368 class. My mentor also went to Old Dominion University (ODU) and emphasized the importance of understanding technical writing, which makes use of definitions. I found this writing method to be helpful in writing my legal papers, too. A definitions section gives time to explain concepts that are reoccurring throughout the rest of the paper and are important for the audience to understand. Brevity in the definitions section is important, especially getting to the point quick and moving to the next. I had to learn how to write in a straight-to-the-point manner, as the government likes to understand things with the least amount of reading possible. My artifact for this class has an abbreviated version of the introduction and definitions section to comply with keeping certain information from public release. Definitions in this paper were immensely useful in explaining how Security Information Event Management (SIEM) systems and the network in question worked.

SOC 337: SOCIAL RESEARCH METHODS – QUALITATIVE AND QUANTITATIVE RESEARCH

In addition to scope narrowing, definitions, and legal writing, I learned social research methods; specifically, quantitative and qualitative analysis of data. I never took statistics courses, so quantitative research was a new challenge. Nonetheless, I persevered and was able to use these methods to conduct social research through projects assigned by our professor. These methods and tools are used by social scientists conducting social research to help organize data quantitative and or qualitatively. While I often do not come across situations where quantitative analysis is needed, I use qualitative methods more and learned the concept of 'coding'. Coding requires examining sources and finding 'snippets' of information containing a keyword or phrase in relation to the research question/topic. Then, analysis of those snippets together into several categories or 'codes' to act as topics covered in research. I found this method to be very helpful in engaging with my sources, analyzing them, and integrating them into an overall perspective.

In this class we wrote a qualitative analysis paper on pre-selected topics and sources. Ironically enough, my topic aligned with technology, precisely the viewpoint of technology at the turn of the century. We were to analyze our sources and come up with 3 codes to write a detailed analysis on the topic. Overall, this method of research was challenging enough to be very engaging and rewarding.

IDS 493: Reflection Paper

TECHNICAL

Perhaps the most expected skill any cyber major is to build upon, I definitely strengthened my technical skills throughout the course of my degree. According to Coursera, technical skills "often require specific education and training to acquire" (Coursera, 2024). Thus, technical skills are typically the center focus of most occupations such as a cybersecurity engineer or penetration tester. Only when I began my second year of studies at ODU was when I began to build upon technical skills in my field. Even then, the coursework I had would not be enough to make me competitive with my peers, so it took outside learning to shorten gaps I my knowledge such as networking and studying for certifications like Security+ and CySA+.

Many challenges were encountered on the way, but the following three courses were what drove my technical skills development: IT 205, a course in objected oriented programming in Java; CYSE 301, a beginner course in cybersecurity operations and techniques; and CYSE 407, a course in techniques in digital forensics.

IT 205: OBJECT ORIENTED PROGRAMMING – UNDERSTANDING PROGRAMMING LANGUAGE BASICS

I took this class in my freshman year when I was still navigating the skills I would need for my major; I was told by some that it would be beneficial to know one or two programming languages as a cyber major, especially to know what we may come across in investigations such as a scripting attack where the script is written in Java, Python, etc. I later found that Python would be a language to know in the field, but the structure and concepts are similar to that of Java, the first language I learned when I took this class. It was very challenging when we began to delve into Object-Oriented Programming (OOP), as this required a new way to think. It helped me realize that I need to imagine things differently from multiple different perspectives to understand a concept in its entirety. I found that this would be the case for most of my technical skill-oriented classes; even though it was extra work sometimes, this class taught me early on that diligence in technical skills was vital to growth.

My artifact for this is one of our final assignments for the class. Most of us are taught to have clean and very organized code (attention to the indentations) but I feel this was one of the things that helped me *visualize* the concept of classes and objects better- seeing the organization in front of me and making connections. This class build the basis of my understanding for programming languages in general and catapulted my learning of Python, a language I needed more for cybersecurity.

IDS 493: Reflection Paper

CYSE 301: CYBERSECURITY TECHNIQUES AND OPERATIONS – THE BASIC CYBER TOOLKIT

This class.. I met my best ODU friend in this class due to the challenging aspect of it. However, I attribute this class to being the first to opening my eyes to the real technical side of cybersecurity and what we as professionals sometimes do for work (depending on our fields). This class also required us to either have prior knowledge of or learn Linux. I knew a scratch of Linux, but nowhere near enough to get by in this class. Luckily our professor to the time to teach us but I did go out on my own- another technical skill lesson I learned.

Here, we examined various basic techniques in cybersecurity operations such as utilizing a network traffic analyzer, a network scanner, the Kali Linux operating system, etc. It was a great foundational course I am glad I took (on accident ironically enough) that really carried me through the rest of my cybersecurity courses. I am providing a 'lab' as an artifact to demonstrate the type of work we did. Real technical for sure!

CYSE 407: DIGITAL FORENSICS – CONNECTING CYBERSECURITY TO LAW ENFORCEMENT

Digital forensics is one of the better-known niches of cybersecurity, as unlike programming, it is specific to cybersecurity. This niche, I found, is a whole toolkit of new technical skills in itself. It takes knowledge of several tools and sometimes languages to understand how to conduct digital forensics effectively. Thus, technical skill in this field is imperative to conducting an investigation in its entirety. This class taught me that some technical skills can be gained only from first understanding others; sometimes this can be done only in one strict fashion, or by different paths. Nonetheless, digital forensics is definitely a field that requires some foundational understanding to get by. In our final project, we had to use all our foundational technical skills we learned to conduct a mock investigation, detailing tools and methods we used to come to our conclusion. A very daunting but fulfilling project!

CRITICAL THINKING

Aligning with the ability to be independent, critical thinking in any situation is a must. It demonstrates one's ability to make complex decisions from understanding and analyzing elements of a situation. In their "Top 8 Soft Skills Employers Want" article, Purdue Global's Jennife Katz, the director of the Center for Career Advancement, writes "demonstrating this skill [critical thinking] to potential employers is important" (Purdue Global, 2023). This is where the phrase 'actions speak louder than words' hones true.

IDS 493: Reflection Paper

Throughout my college career in my interdisciplinary major, I have had plenty of opportunities to grow my critical thinking skills and take them to new heights. I have been able to demonstrate this growth in three classes: POLS 101S, an introduction to American Politics; CRJS 421, a class on deviant behavior from the criminological and sociological perspectives; and IDS300W, a class on interdisciplinary theory and concepts.

POLS 101S – INTRODUCTION TO AMERICAN POLITICS – UNDERSTANDING POLITICS' INFLUENCE ON LAW

I intended to take this course to forge a Pre-Law designation for myself which unfortunately did not come to fruition. Nonetheless, I still find this class incredibly useful to my ambitions in pursuing law and developing my critical thinking skills concerning politics and connecting them to law. This course helped me understand that politics is more than just what most of us think as entertainment currently. It is a process, one that came together over time through strong critical thinking and still requires this concept to understand in the modern age. Understanding how politics has shaped our history to now and how it influences nearly *everything* requires a foundational understanding of politics and the ability to integrate it to other concepts such as the process of law and how new legislation is made, or how the Supreme Court operates.

In our final assignment we were required to select an article from JSTOR and write a peer review. I chose an article related to interests concerning my major: "To Repress or Co-opt? Authoritarian Control in the Age of Digital Surveillance" by PhD Candidate Xu Xu. (Xu, 2021). The real challenge that exercised my critical thinking skills was understanding how to think like a political scientist and to effectively peer review the work of others while adding new input. To utilize concepts I have learned and to apply them to the research of others and provide critiques was a daunting task, especially given I am an undergraduate student critiquing a PhD candidate's paper!

CRJS 421 – DEVIANT BEHAVIOR – THINKING IN DIFFERENT PERSPECTIVES

The ability to think from different perspectives is imperative to grasping a full understanding of any situation and the process of critical thinking. To be deviant is to stray from the social norms or expectations of a culture/society. Even things we think are not deviant could be deviant in one culture vs. another, such as minors drinking is (usually) seen as deviant in America vs. Italy where it is customary to enjoy a glass of wine with meals even as a child (Clinard & Meier, 2011). By understanding the societal and deviant norms of one's own and other cultures, we can better equip ourselves to work well with others and think critically in situations where we need to take the feelings and cultural standards of others into consideration.

IDS 493: Reflection Paper

For our final project, we were to get personal and answer the topic (truthfully or fictionally) "Why am I Deviant?" I chose to be semi-truthful in explaining my deviance by playing with toys (Littlest Pet Shops) at 20. We were to apply theories learned in class to explain why this behavior was deviant to our peers. This project helped me apply and think critically from the perspectives of these theories to understand the behavior of myself and others and the reasoning for why we ought or ought not to do things.

IDS 300W – INTERDISCPLINARY THEORY AND CONCEPTS – COMBINING MULTIPLE DISCPLINES INTO ONE PERSPECTIVE

I used my CRJS 497 paper in my IDS 300W class with permission from both instructors (as I took both concurrently); however, I had to restructure it not only to align with the class's final paper objectives, but tailor it to be written from an interdisciplinary perspective of three different disciplines: law, cybersecurity, and business. In the original paper, I focused on two cases that covered two different situations where the REP mattered, one of which concerned cell phone searches by employers. Learning interdisciplinary research and methods taught me how to integrate several disciplines together into one new interdisciplinary perspective that would not be garnered from looking at the three disciplines separately (Repko & Szostak, 2021, Chapter 1). By having this skill, I will be better equipped to see situations not only from multiple perspectives, but how to create an interdisciplinary solution. I feel this is a necessity for anyone utilizing critical thinking, as most situations require the ability to see from multiple perspectives in an unbiased fashion to create an integrated solution where everyone wins as much as possible.

CONCLUSION

Throughout my college career like many others, I do not think I ever took the time to reflect back on (most of) my previous classes. There were some moments where I did to recall information in new classes, but usually nothing past that. Identifying three skills, Technical, Critical Thinking, and Writing and Research, has forced me to further examine my coursework and derive the true meaning I have learned and gained from them to grow not only as an academic, but also as a person.

I strongly feel that Celeste Nguyen's idea of the eportfolio being a 'living portal' is the best description of this project (Nguyen, 2013). One that aligns with our personal narrative into some sort of narrative coherence; in my case, a thematic coherence where an "overarching theme, value, or principle that... conveys the gist of who she is" is shown through the work presented in my eportfolio (McAdams, 2001, p. 105). The journey of creating an eportfolio and

IDS 493: Reflection Paper

coming to understand that it is more than just a collection of papers from my classes has transformed the outlook I have into something more compete, like reaching the end of a chapter feeling more wholesome as compared to being rushed out into the next.

IDS 493: Reflection Paper

REFERENCES

(n.d.). "The Top 5 Qualities of Every Good Researcher". *Elsevier.* https://scientific-publishing.webshop.elsevier.com/research-process/top-5-qualities-good-researcher/ . Accessed 6 Oct 2024.

(2024, September 16). "What are Technical Skills?" *Coursera.* https://ww.coursera.org/articles/what-are-technical-skills . Accessed 6 Oct. 2024.

(2023, August 28). "The Top 8 Soft Skills That Employers Want". *Purdue Global.* https://www.purdueglobal.edu/blog/careers/top-soft-skills-employers-want/ . Accessed 6 Oct 2024.

Clinard, Marshal & Meier, Robert. (2011). *Sociology of Deviant Behavior, 14th Edition. Wadsworth, Cengage Learning.*

Davis, Elizabeth & Reynolds, Nedra. (2013). "Portfolio Keeping: A Guide for Students." *Bedford/St. Martin's.*

McAdams, Dan P. (2001). The Psychology of Life Stories. *Review of General Psychology*, vol. 5, no. 2, pp. 100–122.

Nguyen, Celeste. (2013). The ePortfolio as a Living Portal: A Medium for Student Learning, Identity, and Assessment. *International Journal of EPortfolio,* vol. 3, no. 2, pp. 135-148.

Repko, Allen & Szostak, Rick. (2021). *Interdisciplinary Research: Process and Theory, 4th Edition. SAGE Publications.*

Xu, Xu. (2021, April). "To Repress or Co-opt? Authoritarian Control in the Age of Digital Surveillance". *The American Journal of Political Science, Vol. 65., No. 2., pp 309-325.*