

GitHub e-Portfolio: <https://nooraalboinin.github.io/ePortfolio/ResearchMethods.html>

Final Reflective Piece

Module: Research Methods and Professional Practice

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WHAT: What have I learned?

Throughout this module, I have significantly expanded my understanding of research design, ethical frameworks, and statistical analysis. Engaging with the structure of academic inquiry from problem formulation to proposal development enabled me to connect theory to practice in meaningful ways. Early activities, like identifying valid research problems and reviewing academic literature, taught me to evaluate the credibility of sources and synthesise evidence critically (Dawson, 2015).

The exercises in Units 8 and 9 were particularly formative. Before this module, statistical analysis felt abstract and intimidating. Now, I can confidently calculate and interpret key measures such as mean, median, standard deviation, chi-square, and t-tests. I discovered that statistics are not simply numbers but narratives evidence that can reveal inequalities, validate hypotheses, or challenge assumptions (Berenson, Levine and Szabat, 2019).

In addition to research and analytical skills, I also gained a deeper understanding of ethical issues. Readings such as Fjeld et al. (2020), Deckard (2023), and Finn and Shilton (2023) highlighted how values like transparency and fairness are not optional add-ons in AI and data science, but foundational pillars. The ACM (2018) and BCS (2022) codes of conduct provided specific guidance on issues like bias, responsibility, and data stewardship.

The module's emphasis on reflection was a novel experience. Creating an e-Portfolio encouraged me to document and evaluate my learning as it unfolded. This helped me visualise progress and appreciate challenges as growth opportunities rather than failures.

My Professional Skills Matrix, SWOT analysis, and action plan allowed me to measure and map personal development systematically (QuestionPro, 2021).

SO WHAT: Why is this important?

The relevance of these learnings extends beyond academia. In my role as a future researcher and policymaker, the ability to design ethical, evidence-based studies is essential. The confidence I gained in statistical tools means I can now interpret national education data with a critical eye something crucial for crafting informed policy recommendations.

Receiving tutor feedback on my proposal was a turning point. It was difficult to accept the critique that my hypotheses were vague. Initially, I felt defensive, even disappointed. However, reflecting on the feedback, I realised that my struggle was rooted in an unclear understanding of dependent and independent variables (Miessler, 2020). I consulted additional sources and reviewed sample proposals, which clarified the importance of operational definitions. This moment deepened my appreciation for feedback as a tool for growth, not judgment.

Another emotional learning curve was time management. Balancing collaborative discussions, artefact creation, and reflection writing stretched my planning skills. I often underestimated how long deep reflection would take. In response, I applied prioritisation strategies from time management literature and gradually shifted from reactive to proactive scheduling. This shift improved my output and reduced stress.

My engagement with ethical case studies, particularly those from the ACM (2018), reshaped my view on professional responsibility. I began to see research as a form of influence, with the power to shape policies, perceptions, and lives. This insight intensified my commitment to ethical integrity, especially when working with vulnerable populations like children in educational research (BRM, 2021).

Critically, I began to question not just how I was learning but why. Why did I choose to focus on education? Why am I drawn to data tools like Power BI? I realised my passion stems from lived experiences in Qatar's educational system, where digital inequity remains a barrier. This reflection revealed that my research is not neutral; it is deeply personal and value-driven.

NOW WHAT: How will I use this learning?

My immediate goal is to implement the research proposal I developed during this module into a small pilot project. I aim to collaborate with local schools to explore the impact of digital literacy interventions post-COVID. To ensure rigour, I will apply the statistical techniques learned in this module to analyse survey responses and classroom observations (Correa et al., 2023).

To support this, I plan to upskill in Power BI, enabling me to create accessible dashboards for educators and policymakers. This aligns with my long-term vision: using data storytelling to advocate for inclusive educational reform in Qatar. Visualising data not only makes trends easier to understand, but also amplifies the voices behind the numbers students, teachers, and families (SAP, 2018).

In addition to technical goals, I intend to sustain the reflective habits built in this module. Tools like the Reflection Toolkit (University of Edinburgh, 2024) and the Rolfe et al. (2001) model have shown me the value of structured reflection in promoting critical thinking. I will use these models to evaluate future projects and teaching experiences.

Collaboration also emerged as a key theme in my development. Engaging in peer discussions expanded my perspective and exposed me to alternative methodologies and ethical considerations. I learned the importance of dialogue, humility, and openness in a research team.

Finally, I recognise the responsibility that comes with knowledge. As a computing professional, my research must not only be methodologically sound but also socially just. This module has equipped me to ask hard questions, challenge assumptions, and act with integrity. My ultimate aspiration is to contribute to educational equity in Qatar, where data-informed strategies can create opportunities for all learners (IBM, 2018).

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