

University of Essex Online

Module: Research Methods and Professional Practice

Unit: 12 – reflective piece

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Reflective Analysis: My Learning Journey Through Research Methods

What: The Foundation of My Research Understanding

My concept of research at the beginning of the module on Research Methods was mostly superficial in the sense that research was perceived as a process of searching for information to substantiate certain conclusions reached beforehand. I entered the course expecting research to be a very simple linear process. However, as time went on, as I continued studying the twelve units, I found a fundamental change in my thinking. The complexity developed in the module around the scientific method, especially the dissimilarity between deductive and inductive reasoning (Andersen & Hepburn, 2015). First, I could not find a way to apply these approaches to computing research. Introducing research questions and literature reviews was challenging because I had not been exposed to the formal scholarly investigation before. It seemed difficult to compose proper research questions, especially considering the requirement to establish gaps in the available knowledge (Boza, 2022).

Unit 3 on the methodological foundations was also not very easy. Philosophical assumptions of research, ontological, epistemological, and axiological assumptions, demanded significant cognitive work (Saunders et al., 2019). These concepts are successfully applied in practice with the help of different data collection techniques such as case studies, and observations, which at first glance appeared abstract and inapplicable to my computing background. The quantitative analysis elements, especially the descriptive and inferential statistics, posed the greatest upward curve in learning. Some statistics concepts I never liked to touch became important in comprehending and interpreting data. Hypothesis testing and data

visualisation were the two activities whose primary goal was to force me out of my comfort zone by making me deal with mathematical theories that had been my bane in the past.

So What: Analysing My Transformation and Emotional Journey

The affective experience of this module consisted of the first anxiety, followed by rising confidence, and ending with a passion towards the research methodology. My involvement in the peer review exercise in unit 2 was a milestone in my learning. The critical review of two papers in computing, which have varied methodological directions, made me break beyond merely reading on the surface into analytical thinking. This activity helped to understand the direct influence of research methodology on the validity and reliability of findings (Purdue University, 2023). The case study on privacy presented through the scenario of Ricardo and Beth produced a high level of emotional turmoil because it challenged a simple view of the ethics of research that I held beforehand. This upset was useful, as it led me to wrestle through the state of affairs surrounding the complicated ethical considerations of data access and participant consent. The situation depicted some of the grievances of moral decision-making in research, which is never easy, especially concerning computing practices, as the utmost focus should be privacy and information security.

Qualitative versus quantitative approaches to research were one of the directions of my work: my attitude toward them initially reflected the idea that quantitative approaches seemed more objective and methodologically scientific. Nevertheless, encounters with the qualitative approaches to methods led to the questioning of this belief. At first, it was a shock to learn that qualitative data interpretation is not objective but a process in which a researcher plays a central role (Wiesner, 2022). This uneasiness compelled me to recognise my epistemological assumptions and see the worth of several methodological perspectives. The elements of

statistical analysis caused much fear at first. Understanding key concepts in descriptive statistics, hypothesis testing, and inferential statistics took diligence and numerous trials. However, the most important support was received during the workshop sessions, during which the arcane of statistical analysis was transformed into a strong analysis tool. The assignments and seminars showed my propensity toward the work I usually do individually and prompted me to develop in terms of working collaboratively in the case of research. The peer review posts have proven the usefulness of different people in reviewing the quality of studies and the choice of methods.

Now What: Applying Learning for Future Development

This educational experience has changed my attitude towards consuming information and creating knowledge, essentially. I now adopt a critical attitude to literature, which states that the methodology, sample sizes and ways of analysis must be evaluated to accept conclusions. The ability is invaluable in my work environment, where evidence-based decision-making continues to be of greater relevance. Developing a research proposal has enabled me to acquire skills that will be directly used in my dissertation project. The knowledge of how to phrase research questions, implement systematic literature review and searches, and choose the working methodologies gives a good foundation for independent research. The focus on validity, reliability, and generalizability guarantees that the further research efforts will pass through the academic inspection (Mihas, 2023).

The ethical considerations discussed during the module have enriched professional practice. The knowledge of research ethics guarantees ethical practice in computing contexts where data collection and analysis are commonplace. The privacy case study focuses on consent and access to information directly transferred to the professional sphere related to user data and systems testing. The module will help one become statistically literate, allowing one to analyse

professional data and research results more advanced. The competencies on designing relevant surveys, hypothesis testing, and creating relevant visualisations will strengthen my ability to contribute to evidence-based organisation decision-making. These competencies are comparable to the current business intelligence needs, in which data-driven decisions are becoming more beneficial (Microsoft, 2023).

Project management concepts introduced in Unit 12 complement research methodology learning, providing frameworks for managing complex investigations while controlling risks and changes. These skills transfer directly to professional project contexts beyond academic research. I plan to pursue additional statistical training to strengthen quantitative analysis capabilities. The module has highlighted the importance of continuous professional development in research methodology, particularly as computing technologies evolve rapidly. Industry certifications in data analysis and research methods will support career advancement while maintaining research competency. The e-portfolio development process has demonstrated the value of reflective practice for professional development. Regular reflection on learning experiences and skill development will become a permanent feature of my professional practice, supporting continuous improvement and adaptation to changing professional requirements. This module has transformed my understanding of knowledge creation from passive consumption to active, critical engagement. The skills developed will enhance academic and professional endeavours, providing tools for rigorous inquiry and evidence-based decision-making essential in contemporary computing contexts.

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