



University of Essex | Online

Student ID: 12693547

Module: Research Methods and Professional Practice

Assignment: End of Module Assignment

## **Research Methods and Professional Practice Module Reflection**

### **Introduction**

The Research Methods and Professional Practice module has been crucial in developing my skills in research methodologies, data analysis, and professional growth. Research plays a vital role in computing, informing decision-making, technological advancements, and ethical considerations (Creswell & Creswell, 2018). The module structured my understanding of qualitative and quantitative research methods, enhancing my ability to critically assess literature, formulate research questions, and apply statistical analysis. This reflection follows Gibbs' Reflective Cycle (1988) to evaluate my experiences, strengths, challenges, and areas for future development.

### **Description**

The module introduced key research methodologies, hypothesis testing, literature reviews, data visualization, and professional skills development. Understanding the differences between qualitative and quantitative research and ethical research practices was emphasized (Saunders, Lewis & Thornhill, 2019). I engaged in practical applications such as developing a research proposal, conducting statistical analyses, and presenting findings through data visualizations. These activities deepened my understanding of academic and professional research contexts. Peer discussions and formative exercises provided opportunities for critical discourse and feedback.

A core component of the module was the e-Portfolio, requiring submissions such as a literature review, hypothesis testing worksheets, data analysis exercises, and a research proposal, demonstrating my ability to apply research methodologies effectively.

### **Feelings**

Initially, I felt overwhelmed by the complexity of research methodologies and the extensive reading required. Conducting a literature review seemed particularly challenging as it involved critically evaluating numerous academic sources (Bryman, 2021). Additionally, quantitative research and statistical analysis were areas where I lacked confidence, making the early weeks difficult.

As the module progressed, I became more engaged and confident. Completing formative assessments and statistical worksheets provided valuable practice, and peer feedback helped refine my research approach. Developing a research proposal was particularly rewarding as it allowed me to explore a personally relevant topic while applying learned methodologies.

However, challenges remained, particularly regarding inconsistencies in the reading list and discrepancies between learning materials, which caused confusion and required additional effort to clarify. Time management was also a significant issue due to balancing multiple assignments while dealing with several challenges.

## **Evaluation**

The structured approach of the module was one of its greatest strengths, progressively building foundational knowledge. Practical elements like data analysis and visualization reinforced theoretical concepts and provided hands-on experience (Flick, 2020). Peer discussions were valuable, broadening my understanding of research ethics and methodologies and refining my critical thinking skills (Tracy, 2020).

However, some aspects needed improvement. The reading materials sometimes lacked coherence, making certain concepts difficult to follow. Additionally, time constraints limited the ability to fully engage with all coursework, particularly the in-depth data analysis formative. The statistical exercises, though useful, could have been more structured with clearer guidance on interpreting results.

Technical challenges with data analysis software such as Power BI initially hindered progress. While I eventually became comfortable using these tools, additional workshops or tutorials on advanced features would have been beneficial.

## **Analysis**

The module significantly enhanced my research and analytical skills, essential for academic success and professional growth (Bell, 2022). Critical evaluation of sources, synthesizing information, and applying research methodologies are crucial for independent research and informed decision-making. Proficiency in statistical analysis and data visualization strengthened my ability to interpret complex datasets and present findings effectively.

One key takeaway was the importance of research ethics. Ensuring transparency, accuracy, and objectivity in data reporting is fundamental to maintaining research integrity (Resnik, 2021). Ethical considerations reinforced my commitment to conducting rigorous and responsible research.

Professional skills development was another critical aspect. Reflecting on time management, problem-solving, and communication skills helped identify areas for improvement. Completing the Professional Skills Matrix and Action Plan provided a structured approach to further development beyond this module.

Despite these gains, I recognise the need to build confidence in statistical analysis and data interpretation. Additionally, improving academic writing and constructing coherent arguments will be essential for my dissertation and future research projects.

## **Conclusion**

The Research Methods and Professional Practice module has been an invaluable learning experience, equipping me with skills to conduct high-quality research and enhance professional competencies. While I initially struggled with statistical analysis, academic writing, and time management, I made significant progress in these areas.

Engaging in peer discussions, completing formative assessments, and applying research methodologies in practical tasks helped develop a strong foundation in research methods and professional skills. The module reinforced the importance of critical thinking, ethical research practices, and effective communication, all of which are essential for academic and professional success.

### **Action Plan**

To build on the skills developed in this module, I will focus on strengthening data analysis and statistical proficiency by enrolling in online courses on inferential statistics and predictive analytics. I will also practice using Power BI to improve my analytical skills.

Improving time management and project planning is essential. I will use Trello and Gantt charts to structure my research tasks and adopt the Pomodoro Technique to enhance productivity. Setting SMART goals to help track progress and ensure deadlines are met.

To refine my academic writing and critical thinking, I will seek feedback from peers, and analyse published research papers to improve argument clarity. Using tools like Grammarly to enhance writing accuracy and reference management.

For presentation and communication skills, I will practice delivering research findings to gain confidence and enhance my ability to present research persuasively.

I will review the ACM Code of Ethics and BCS Code of Conduct to reinforce ethical research practices and analyse case studies on research integrity.

Lastly, for professional development, I will pursue certifications like Google Data Analytics and actively engage in networking through LinkedIn groups. This will help me stay updated on industry trends and enhance employability.

By following this structured plan, I aim to apply my learning effectively, enhance research competencies, and prepare for future academic and professional challenges.

### **References**

Association for Computing Machinery (ACM). (2018). *ACM Code of Ethics and Professional Conduct*. Available at: <https://www.acm.org/code-of-ethics> [Accessed 28 Jan. 2025].

Bell, J. (2022). *Doing Your Research Project: A Guide for First-Time Researchers*. 7th ed. London: Open University Press.

British Computer Society (BCS). (2022). *BCS Code of Conduct*. Available at: <https://www.bcs.org/membership/become-a-member/professional-standards/code-of-conduct/> [Accessed 28 Jan. 2025].

Bryman, A. (2021). *Social Research Methods*. 6th ed. Oxford: Oxford University Press.

Creswell, J.W. & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 5th ed. London: SAGE Publications.

Flick, U. (2020). *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*. 3rd ed. London: SAGE Publications.

Gibbs, G. (1988). *Learning by Doing: A Guide to Teaching and Learning Methods*. Oxford: Further Education Unit, Oxford Polytechnic.

Resnik, D.B. (2021). *The Ethics of Research with Human Subjects: Protecting People, Advancing Science, Promoting Trust*. Cham: Springer.

Saunders, M., Lewis, P. & Thornhill, A. (2019). *Research Methods for Business Students*. 8th ed. Harlow: Pearson Education.

Tracy, S.J. (2020). *Qualitative Research Methods: Collecting Evidence, Crafting Analysis, Communicating Impact*. 2nd ed. London: Wiley.