University of Essex
MSc Artificial Intelligence
Module: NA_PCOM7E April 2025 B
Unit 12: Assessment – Individual Reflection

Individual Reflection

I. Introduction

The project was to analyze health data drawn from the 2011 UK Data Archive Study Number 7260, specifically in regard to extracting statistical trends related to the rates of alcohol consumption by adults in England.

The Gibbs' Reflective Cycle is a useful heuristic tool for reflecting on student project experiences (Praveena et al, 2025). The cycle follows six steps: Description, Feelings, Evaluation, Analysis, Conclusion, and Action Plan (Praveena et al, 2025).

Accordingly, this essay will address each step of the cycle in turn.

II. Description

The Description step of the Gibbs' Reflective Cycle is used to explain what work was accomplished during the project (Praveena et al, 2025).

This project focused on developing fluency with standard R coding and analysis. In particular, I accomplished the following tasks (Bullen, 2025):

1. Installed and ran R Studio, an industry-standard platform for R Coding.
2. Scrubbed the data file to be analyzed to only that subset needed for the project, and replaced unusable and missing values with usable placeholder values.
3. Imported the scrubbed data file into R Studio.
4. Ran a series of statistical analyses using R coding, including Shapiro-Wilk and Anderson-Darling normality tests, chi-squared tests, and t-tests.
5. Evaluated the results of that code-based analysis using p-values compared to significance cutoff rates.
6. Researched supporting literature on the subject matter using Google Scholar.
7. Assembled a set of relevant sources from supporting literature.
8. Applied the conclusions of those sources to the statistical conclusions reached via the preceding actions.
9. Formed and presented a conclusion and recommendations for further research based on all of the preceding actions.

III. Feelings

The Feelings step of the Gibbs' Reflective Cycle is used to examine one’s subjective engagement with the project, both positively and negatively (Praveena et al, 2025).

Overall, I felt that I was engaged with the subject matter of the project. While I had

been exposed to R coding before in professional settings, it was only in the context of learning the results of analyses performed by colleagues. I had not done any R coding and had not used any R software before, and I wanted to learn how to do so.

IV. Evaluation

The Evaluation step of the Gibbs' Reflective Cycle is used to discuss what went well and what presented difficulties or challenges in completing a project (Praveena et al, 2025).

For this project, I had the benefit of well over a decade of working as a software developer. That background experience made learning the basics of R coding fairly straightforward. I did not struggle with the basics of installing R Studio or with working through the R tutorial material provided with the course.

One challenge in completing the project, however, revolved around learning the intricacies of scrubbing the data to analyzed into a format that would be most compatible with R analysis. For example, some values were originally provided as alphanumeric text strings, when they needed to be numerical integer or float values to be processable. This led to the need to scrub and re-scrub the data – and repeat analytical coding steps – until it was properly formatted into a usable state and processable into actionable statistical conclusions, which added a bit more time to the project than I had originally anticipated.

V. Analysis

The Analysis step of the Gibbs' Reflective Cycle is used to elaborate on the previous steps at a gestalt level that attempts to identify root causes for project results, and lessons learned therefrom (Praveena et al, 2025).

Overall, I would say that I made the incorrect assumption at the beginning of the project that the data to be analyzed was already in scrubbed and usable format, perhaps assuming that because the data was drawn from an official survey, any such needed data pre-processing had already been undertaken as part of the survey. This assumption was incorrect because while the data surely was processed to the criteria of that survey project, those criteria wouldn’t necessarily cross over by default to the criteria of an academic project.

In terms of data formatting, at least, that cross over was not present, which then required thinking through the original formatting of the data, defining how it needed to change to be usable for the project, then transforming the data types as needed.

In terms of learning the basics of R coding and R studio overall, however, the project accomplished its goals as expected.

VI. Conclusion

The Conclusion step of the Gibbs' Reflective Cycle is used to summarize conclusions and lessons learned from project work (Praveena et al, 2025).

Overall, I would conclude that the project was successful in accomplishing its stated goals of acting as an introduction to R coding and to R Studio as an analytical software platform.

The project also provided a valuable reminder that it is necessary to understand the scope and purpose of any existing data set used in statistical analysis – as opposed to data sets one creates and assembles on one's own – before attempting to use it for a purpose it may not have been originally designed for.

VII. Action Plan

The Action Plan step of the Gibbs' Reflective Cycle is used to identify useful actions to take in the future in light of the lessons learned from the preceding steps (Praveena et al, 2025).

In terms of lessons learned, I would budget more time for data pre-processing, and take a bit more time to investigate what data types R coding requires for each type of analysis to be undertaken, before attempting the coding stage of a future R-based project.

VIII. References

Bullen, Matthew (2025). NA_PCOM7E April 2025 B - Presentation Slides.

Praveena, K.S., Juslin F, Patil, C.M. and Bhargavi K (2025). Using Gibb's Reflective Model Approach for Enhancing Project-Based Learning Among Students Through Reflective Assessment. *Journal of Engineering Education Transformations*, [online] 38(2), pp.148–155. doi:https://doi.org/10.16920/jeet/2025/v38is2/25018.

UK Data Archive Study Number 7260 - Health Survey for England. (2011). Available at: https://doc.ukdataservice.ac.uk/doc/7260/mrdoc/pdf/7260userguide.pdf.