METHODOLOGY

Data collection

The Dataset used for this project was collected from the anonymised Open University Learning Analytics Dataset (OULAD). This dataset contains information about students' demographic data, their academic performance and their learning behaviour which indicates their interaction with the VLE (Kuzilek, Hlosta and Zdrahal, 2017).

The dataset contains seven CSV files with information approximately 32,593 registered students.

The Open University Learning Analytics Dataset (OULAD) https://analyse.kmi.open.ac.uk/open_dataset comes as the following csv files:

- assessment.csv
- courses.csv
- studentAssessment.csv
- studentInfo.csv
- studentRegistration.csv
- studentVle.csv
- vle.csv

Data Merging and Cleaning

Three CSV files were used in this study (studentVle, vle and studentInfo) to achieve the set objectives. The studentVle file contains information about interactions with the VLE including the sum of clicks, the vle file contains information about the materials in the VLE including activity type and the studentInfo file contains demographic information and result in each module (Kuzilek, Hlosta and Zdrahal, 2017).

To achieve the first objective, two files were merged (studentVle and studentInfo) using a common column and using the student ID as a unique identifier to create a new dataset which contained 15 variables with 'total_clicks' as the target.

To achieve the other objectives, the three files were merged to create a new dataset which contained 16 variables with 'final_result' as the target. The codes for the data merging and cleaning can be found at

Data Analysis

- Analyse the VLE data to identify patterns and trends in student engagement.
- Conduct exploratory data analysis to identify factors that contribute to student result with VLEs.
- Investigate correlations between student VLE interactions and result.

Collaboration And Communication:

Face-To-Face: This provided avenue for collaboration, brainstorming and creativity as Team members shared ideas more naturally and spontaneously. It built rapport and trust and created strong relationships. It was faster and easier to resolve disputes and problems as sensitive issues were addressed more directly and empathetically. It provided a more effective communication as it eliminated technology issues and distractions.

Microsoft Teams: Microsoft Teams served as the central platform for communication and collaboration among team members. It provided that remote support by allowing members to stay in touch anywhere, and on any device. This helped streamline communications and reduced email clutter allowing Team members to host smarter meetings by providing screen sharing and share files in one place.

Collaboration on Blackboard: Its instant messaging, file sharing, and video conferencing capabilities fostered seamless communication and ensured that all team members stayed informed and connected throughout the project.

WhatsApp: This was utilized for instant messaging and real-time communication among team members. Its ease of use and accessibility allowed for quick exchanges of ideas, updates, and coordination, enhancing the team's overall efficiency and productivity.

Reference

Kuzilek J., Hlosta M., Zdrahal Z. Open University Learning Analytics dataset Sci. Data 4:170171 doi: 10.1038/sdata.2017.171 (2017).