How Tertiary Students Managed their Learning During the COVID – 19 Lockdown Periods: Findings from the Learner Management System (Moodle)

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Outline

- Introduction
- Background
- Findings of the Learners Response
- Conclusion, Limitations & Future Scope

Introduction

- As the first wave of COVID-19 in 2020 sweeps New Zealand (NZ) communities, the NZ tertiary institutions were opting to shift to online teaching and learning environment.

- Moodle is the most widely used Learning Management System (LMS) in the world that can be effectively used to create an efficient distance learning process for students/tauira

BACKGROUND

Stages of COVID 19 Lockdown

Use of MOODLE (LMS) to deliver the learnings

Understand and analyse student traffic logs data to access the LMS

Background

- Transition from face to face to online teaching has become a substantial drift in tertiary teaching. The LMS (Moodle) platform has assisted educators in creating online resources, convey information, grade assignments, and deliver online activities.

- Both educators and students have access to Moodle which creates an online/distance learning environment of ongoing communication, social interaction, and cognitive skills for the students/tauira
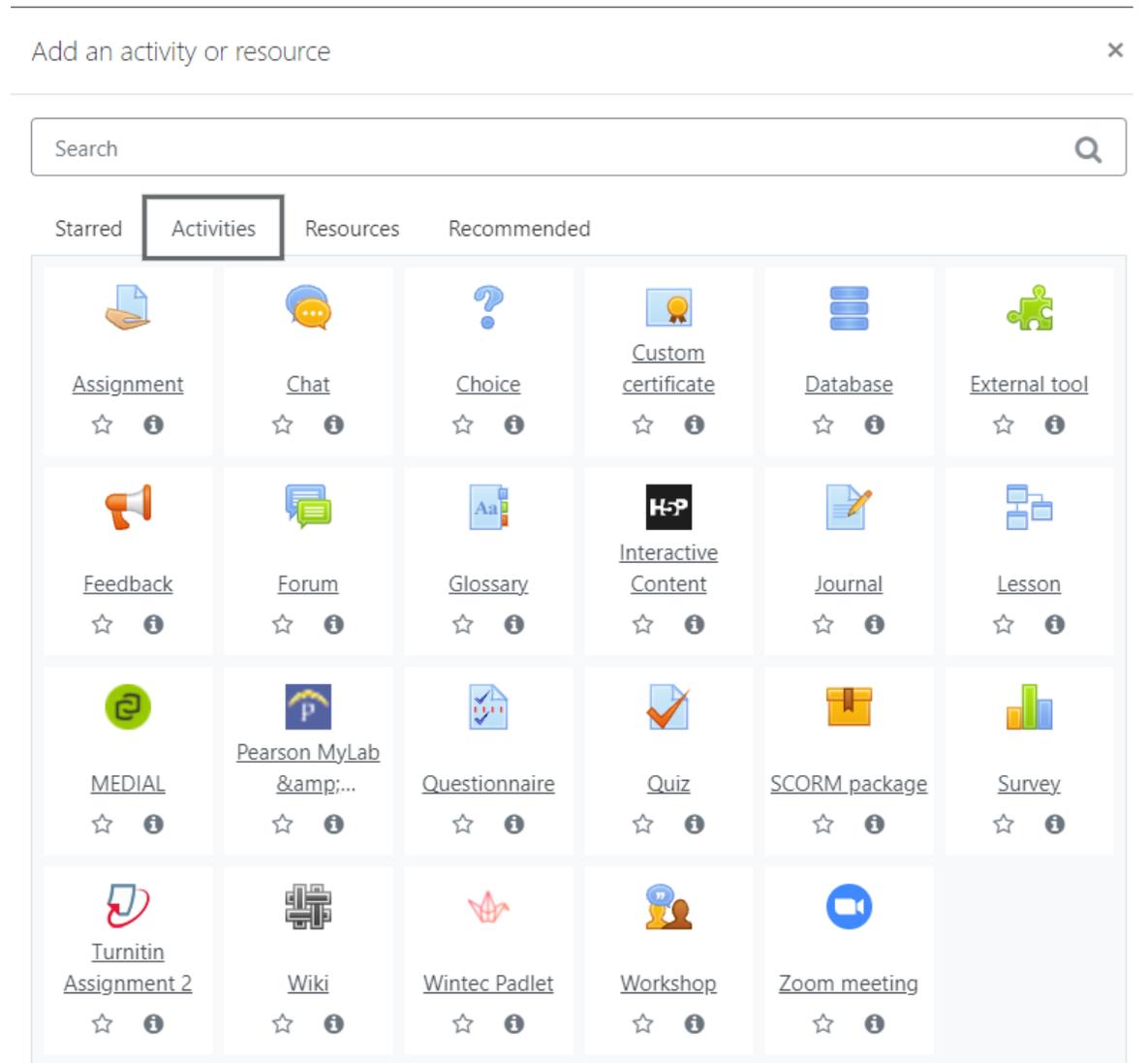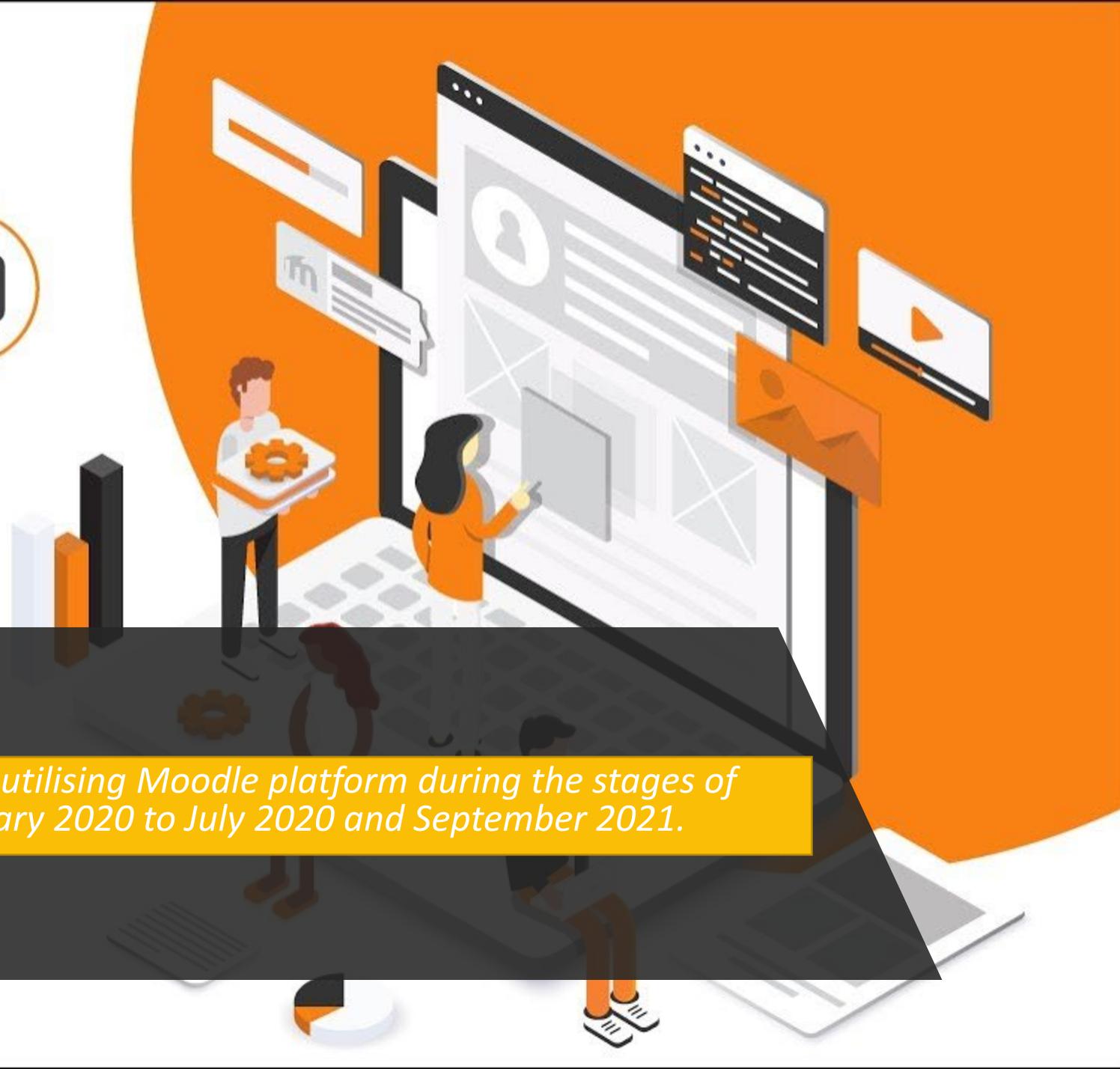

Figure 1: A Snapshot of Adding Activity/Resources on Moodle 3.9 for Online Teaching

Objective

To analyse the student traffic logs data in utilising Moodle platform during the stages of COVID-19 lockdown occurring from February 2020 to July 2020 and September 2021.
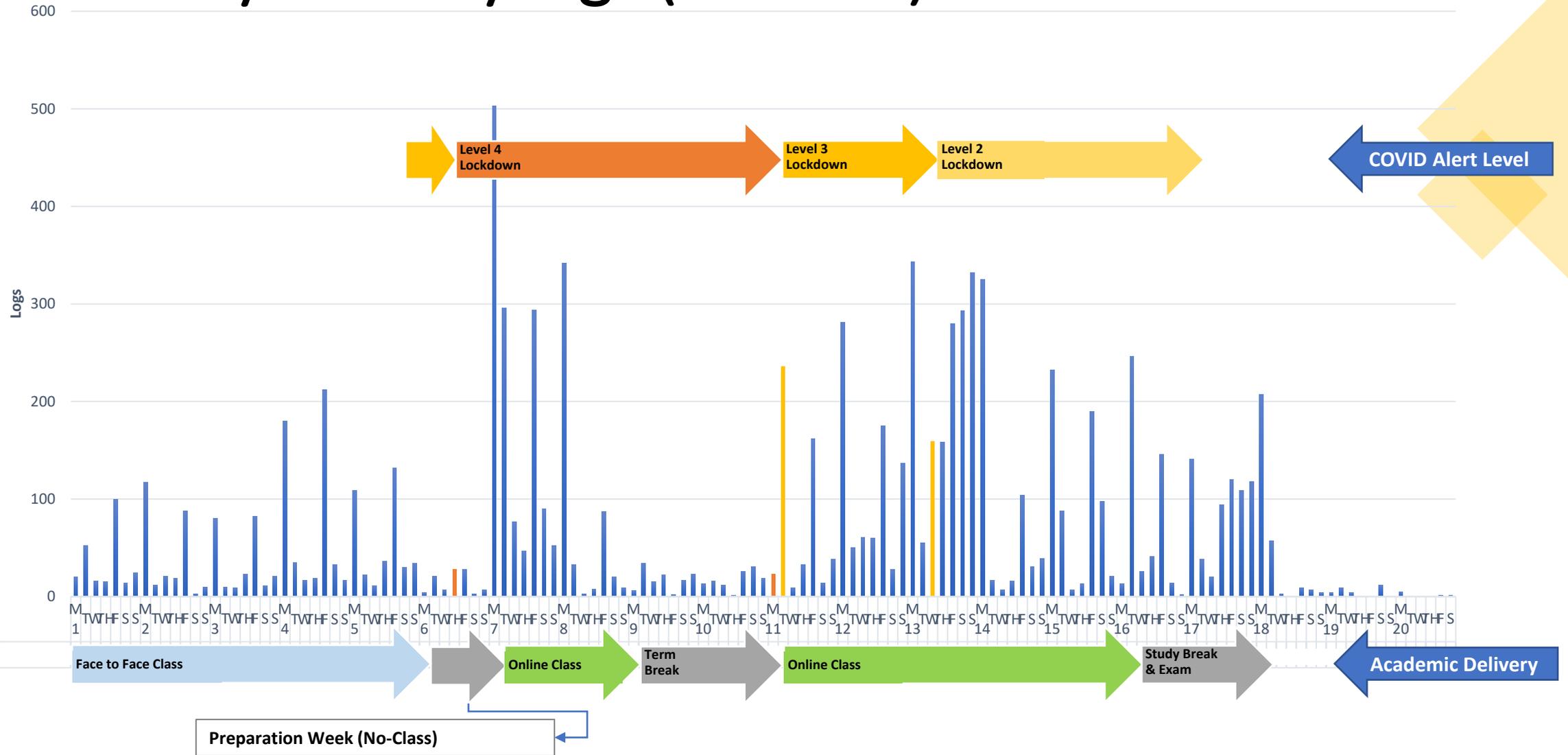
Project Procedure

Moodle is one of the most used LMS in practice globally for tertiary education. For this study, the current version of Moodle (3.9) is utilized for data collection.

The functions in the 3.9 version includes various plugins that correspond to students' specific activity logs such as assignments, lessons, pages, quiz, URL, folders and files.

The procedure of data collection from Moodle involves

- ❑ Examining 87,194 Moodle activity logs from 191 students from February 2020 to September 2021 including two nationwide lockdowns in NZ

- ❑ The sampling was done through 9 distinct Engineering courses at the Waikato Institute of Technology (Wintec).

- ❑ The log data for this study was taken from first and second-year students following New Zealand Diploma in Engineering (NZDE) (Level 6) and Bachelor of Engineering Technology (BEng.Tech) (Level 7) within the area of engineering.
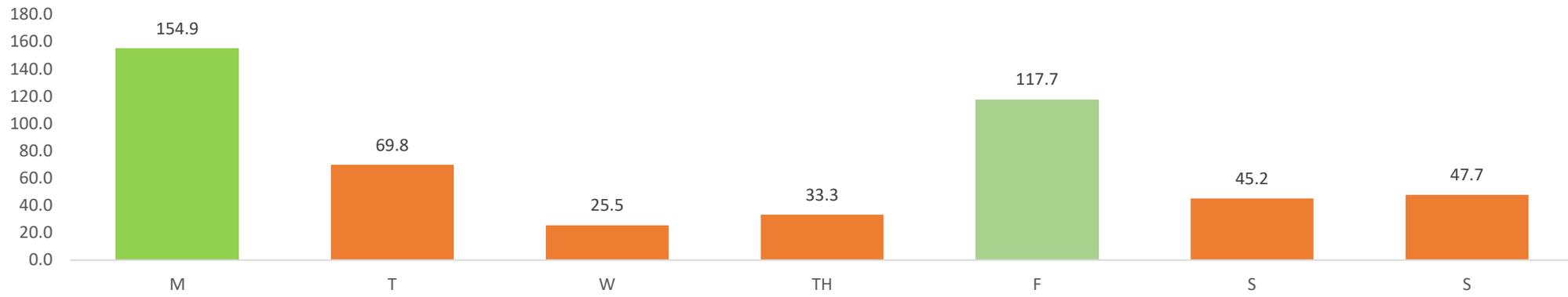
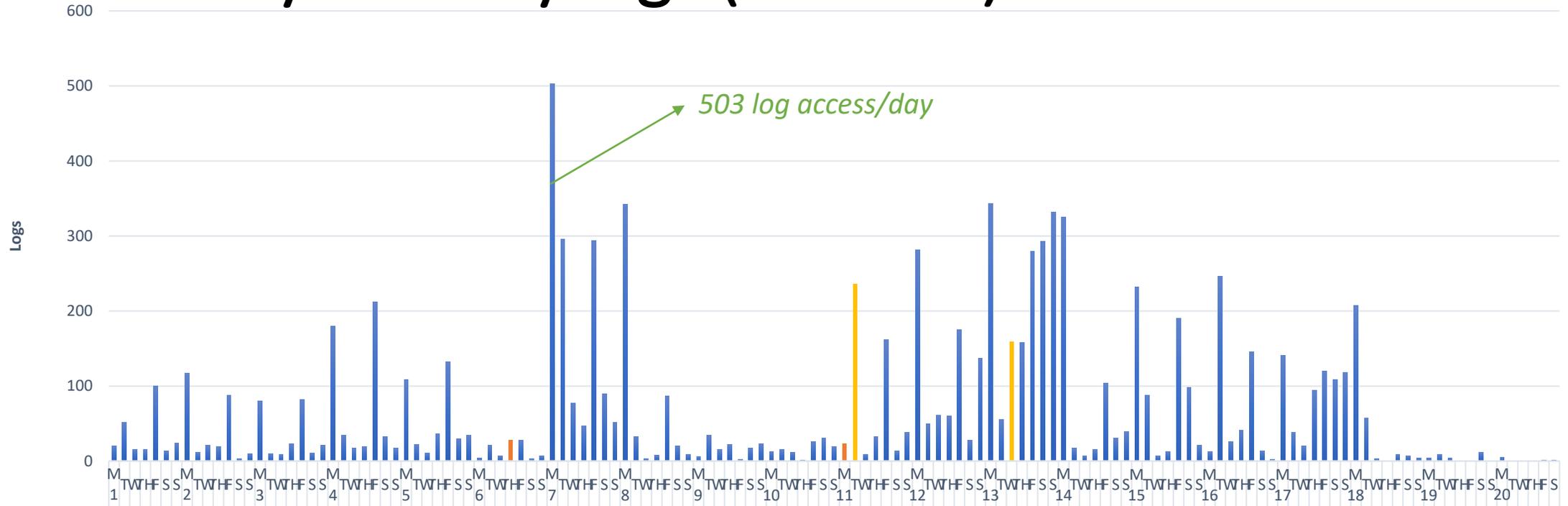# Data Analysis: Daily logs (2020 S1) - 1st COVID-19 Wave

DE4302 & MG5002 Engineering Mechanics (Total 25 students)

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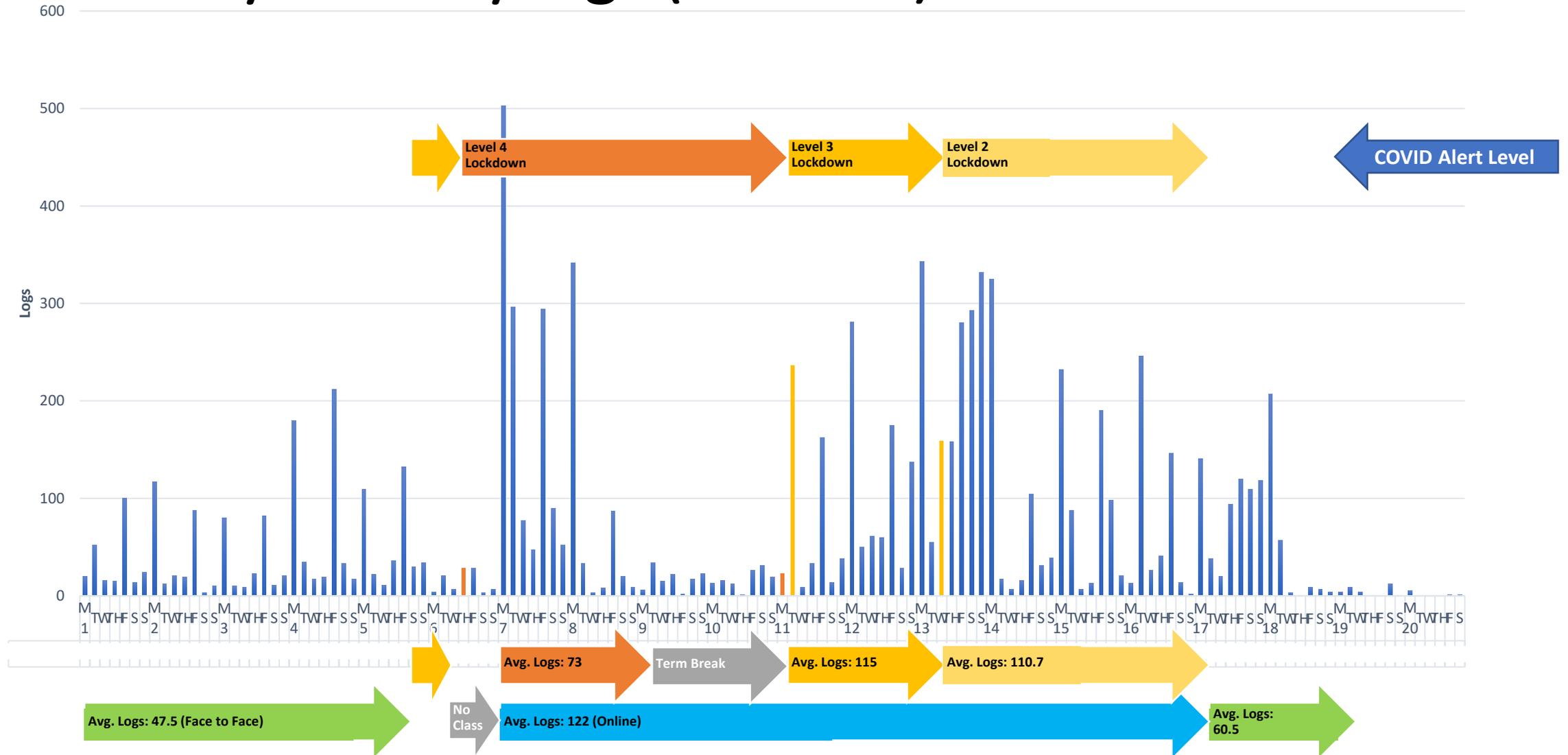
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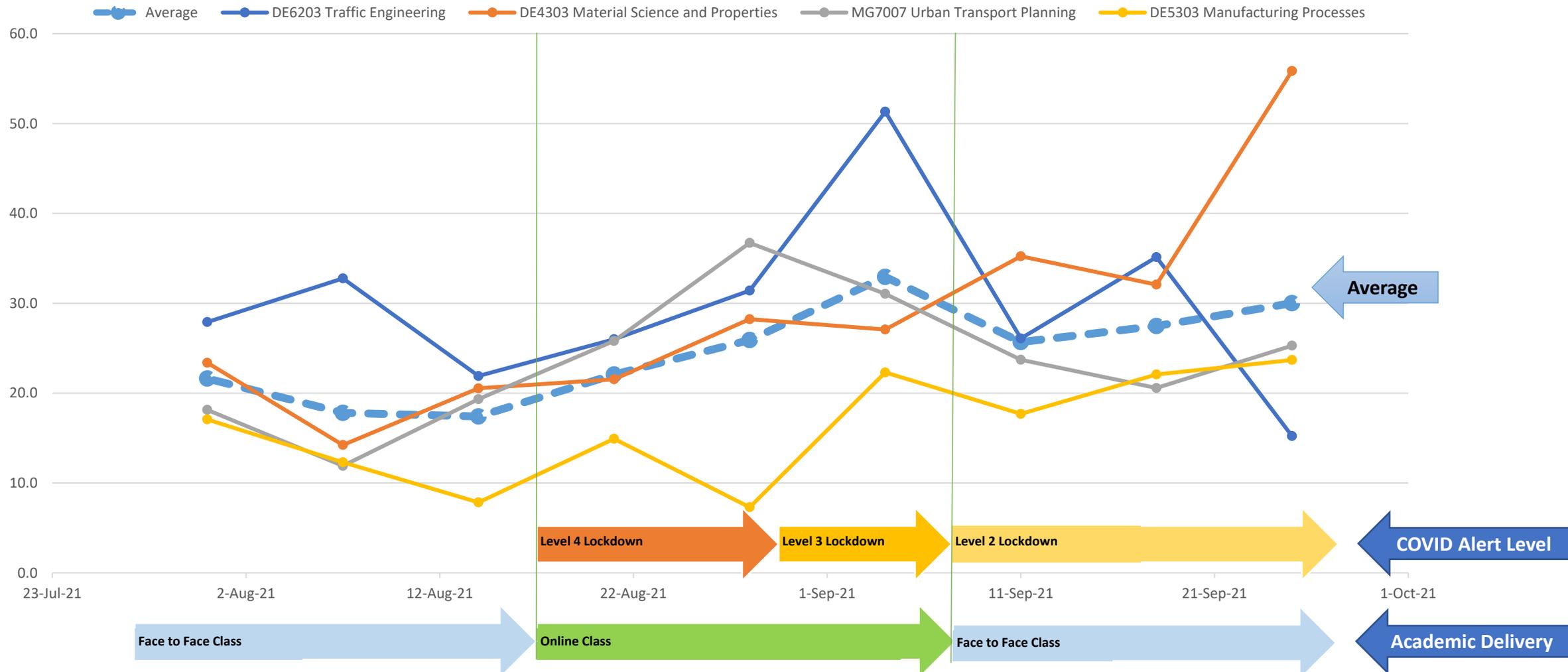
Data Analysis: Weekly logs (2021 S2- Week 1-9) - 2nd COVID-19 Wave

Module	NZQA Level	Enrolment	Week 1-9	
			Total Logs	Average Logs (Week/Student)
DE6203 Traffic Engineering	6	13	3052	29.4
DE4303 Material Science and Properties	5	21	4463	26.6
MG7007 Urban Transport Planning	7	13	1888	18.2
DE5303 Manufacturing Processes	5	22	5891	33.5

Sample collected from 4 Engineering courses (Mechanical and Civil)

Data Analysis: Weekly logs (2021 S2- Week 1-9) - 2nd COVID-19 Wave

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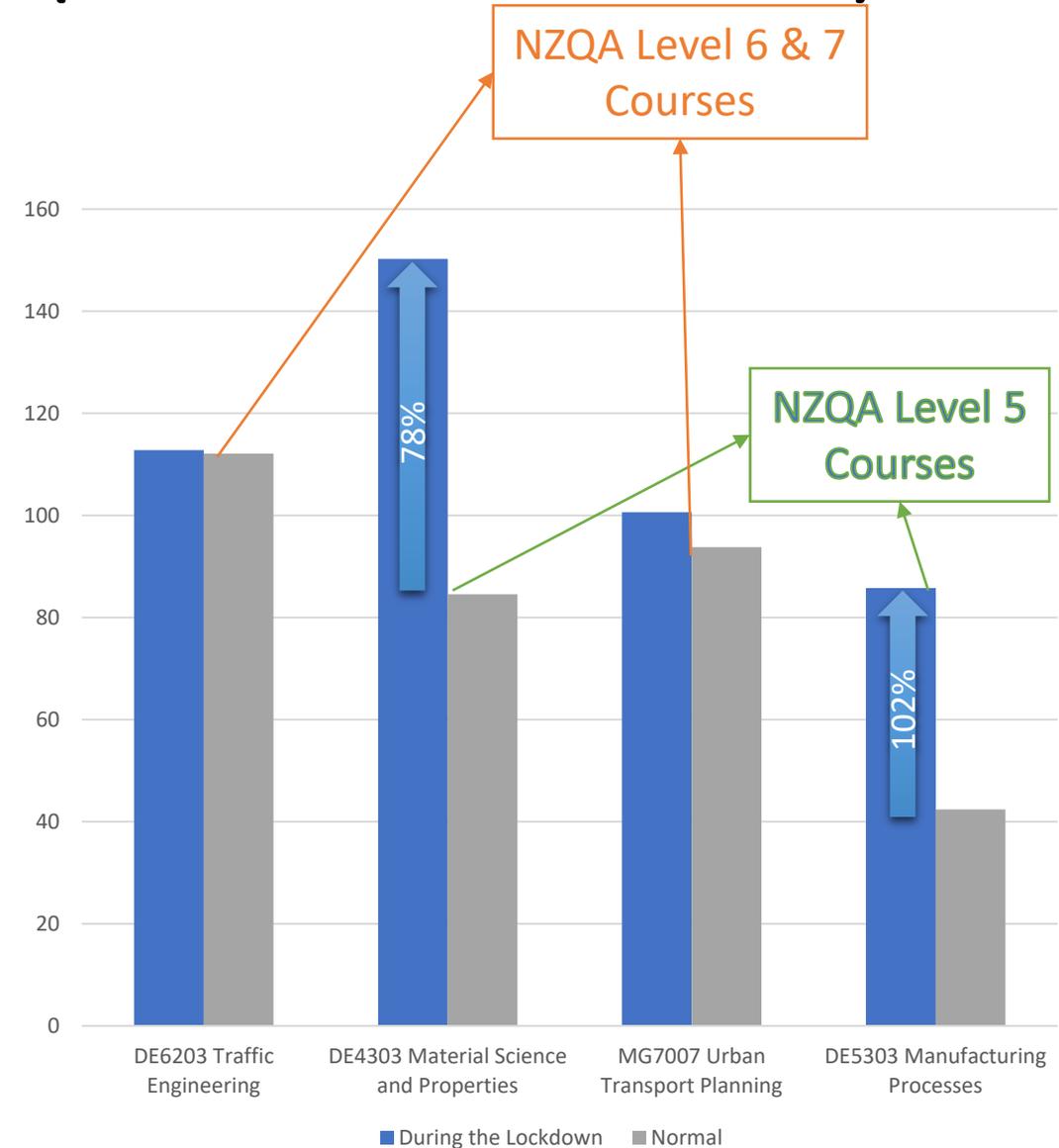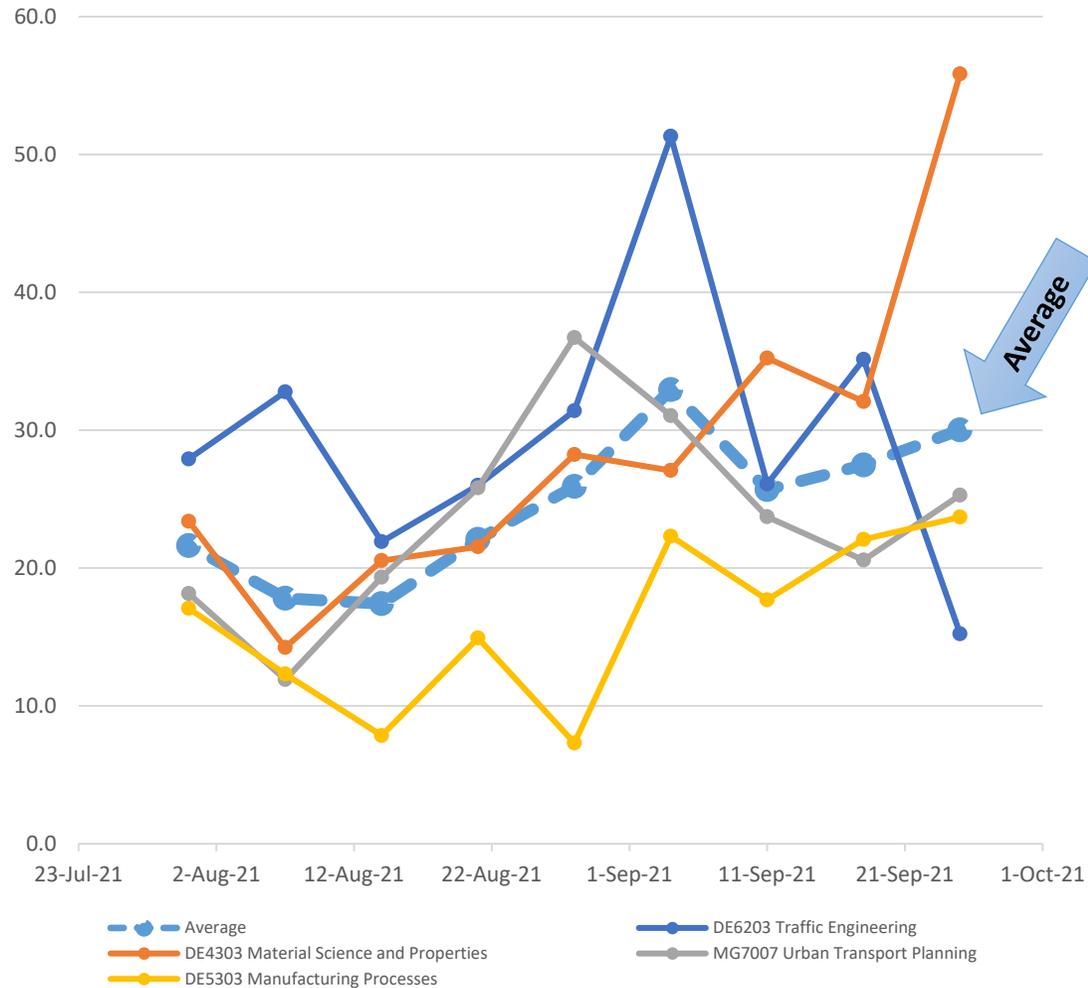
Data Analysis: Comparison of the Four Semesters (2020 S1- 2021 S2)

Year	Semester	Length of Lockdown	Average Monthly Logs	% Difference
2020	**Semester 1**	**52 days**	**125.5 /student**	**65.13** ↑↑
2020/2021	*Semester 2 Semester 1*	*-*	*76 /student*	*base*
2021	**Semester 2 (Week 1- 9)**	**22 days**	**97.3 /student**	**28.02** ↑

Conclusion, Limitation, & Future Scope

Moodle was found to be an effective resource to monitor online activities for the tauira

Significant transition was witnessed from the tauira between the two lockdown periods from Face-to-Face to online learning environment

Larger sampling needs to be done to validate the tauira behaviour of student accessibility to online learnings.

The study requires more advanced statistical analysis to characterize and capture student's understanding in different learning environments (e.g., correlation between number of logs and the final grade)

Implement and broaden the study by collecting larger samples of student data by collaborating with the ITS department (e.g., comparison between the academic departments)

Investigate the different student profiles and background (e.g., International, domestic students, Māori & Pacifica students)

Further Comments or Inquiries

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