

MIXED-METHODS DATA ANALYSIS EXAMPLE (CHAPTER 4 SAMPLE)

Chapter 4: Data Analysis and Findings

4.1 Introduction

This chapter presents the findings of a mixed-methods explanatory study that explored how **online learning environments influence student motivation**. Quantitative data from a survey of 102 students provide an overview of motivation and engagement patterns. Qualitative data from 12 interviews then help explain the reasons behind these patterns. The chapter is organised into three sections: quantitative findings, qualitative findings, and integration of both datasets.

4.2 Quantitative Findings

4.2.1 Descriptive Statistics

Table 4.1 summarises the key descriptive statistics for the two primary variables: motivation and engagement.

Table 4.1: Descriptive Statistics (N = 102)

Variable	Mean	SD	Min	Max
Motivation Level	3.46	0.71	1	5
Engagement	3.22	0.81	1	5

Interpretation:

Overall, students reported moderate levels of motivation and slightly lower levels of engagement during online learning. The variation in responses indicates that students experienced online learning differently depending on course structure and personal learning preferences.

4.2.2 Inferential Statistics: Correlation Analysis

A Pearson correlation was conducted to examine the relationship between motivation and engagement.

- $r = .58$
- $p < .001$

Interpretation:

There is a strong, statistically significant positive relationship between student motivation and engagement. This indicates that students who are more engaged (e.g., participate in discussions, watch lectures, interact with teachers) also tend to report higher motivation levels. These findings support the study's first hypothesis.

4.3 Qualitative Findings

4.3.1 Overview of Coding Process

Qualitative interview data were analysed using thematic analysis. The researcher transcribed all interviews, read each transcript multiple times, coded meaningful phrases, grouped similar codes, and developed overarching themes that address the research questions.

Initial Codes Included:

- “hard to focus”
- “need teacher interaction”
- “peer support missing”
- “flexibility helps”
- “feel disconnected”

Code Categories:

- interaction challenges
- learning environment factors
- motivation triggers

These categories informed the final themes below.

4.3.2 Themes

Theme 1: Reduced Interaction Lowers Motivation

Many students described feeling less motivated when they could not interact with teachers or classmates.

Sample Quote:

“Without live discussions or teacher presence, I feel disconnected and less driven to participate.”

This theme helps explain the moderate average motivation levels observed quantitatively.

Theme 2: Flexible Schedules Improve Convenience but Increase Procrastination

Students valued the flexibility of online learning but also noted it reduced accountability.

Sample Quote:

“I like that I can watch lectures later, but it also means I keep delaying things.”

This theme highlights the mixed emotional response students have toward online learning environments.

4.4 Integration of Quantitative and Qualitative Findings

Mixed methods integration helps establish a more complete understanding of how online learning affects motivation.

4.4.1 Areas of Convergence

Both datasets highlight the role of interaction:

- **Quantitative data** show a strong positive correlation between engagement and motivation.
- **Qualitative interviews** reveal that students feel more motivated when they can interact, ask questions, and receive feedback.

This convergence strengthens the conclusion that social and academic interaction is a key driver of motivation in online learning.

4.4.2 Areas of Complementarity

Qualitative themes add depth to the numerical patterns:

- The **moderate motivation scores** from the survey are explained by students’ difficulty maintaining focus online.
- Lower engagement scores match interviews where students discussed missing peer support.

The qualitative data therefore clarifies *why* the quantitative trends exist.

4.4.3 Meta-Inference

The integrated findings indicate that student motivation in online learning is influenced most strongly by **interaction quality** rather than by convenience or flexibility alone.

Students feel motivated when they experience:

- teacher presence
- peer communication
- opportunities to ask questions
- timely feedback

Low-interaction environments reduce engagement, which in turn reduces motivation.

4.5 Summary

This chapter presented the quantitative and qualitative findings of the study and explained how both forms of data contribute to a deeper understanding of student motivation in online learning settings. The next chapter discusses these findings in relation to existing literature and outlines the implications for educators and course designers.
