

1. Introduction

This protocol outlines the methodology for a video-based behavioral analysis of a student interacting with a G4L Course Planner. The focus is on identifying user experience patterns related to navigation efficiency, cognitive load, and emotional responses using synchronized screen and webcam recordings.

2. Research Questions

How effectively does the student navigate through the G4L Course Planner interface?
What behavioral signs indicate cognitive hesitation or decision-making difficulty?
What affective reactions are visible during interactions with the system?

3. Method

3.1 Design

This is a naturalistic video observation study combining screen capture and webcam recording. The method allows us to examine the correspondence between on-screen actions and user reactions (verbal and non-verbal).

3.2 Personas

The participant is the researcher (myself), a graduate student familiar with digital platforms but new to the G4L Course Planner. Prior experience with similar tools includes university registration systems and academic planning spreadsheets.

3.3 Participants

Participant: Self (researcher)

Consent: Self-consented, with full awareness of scope and purpose

Rationale: Exploratory pilot test before broader user testing

3.4 Instruments & Measures

Screen recording software: Wondershare

Coding method: Observation coding table using predefined codes

3.5 Procedure

Technical setup: Wondershare

Tasks: Plan one semester of 3 required courses

Variables to code for:

Variable	Measure	Observable Behavior	Code
System Navigation	Path Optimality	Optimal path — minimal steps, direct to goal	O
		Detour — multiple irrelevant pages visited, backtracking	D
Cognitive Load	Decision Latency	Quick choice — decision made within 5 seconds	Q
		Hesitation — pause, mouse hover, tab switching > 5s	H

Variable	Measure	Observable Behavior	Code
	Verbal Uncertainty	Expressions such as “Where is it?”, sighs, or mumbling	U
Affective State	Facial Expression	Neutral expression	N
		Frown, eyebrow raise (confusion/frustration)	F
		Smile (relief, satisfaction)	S

3.6 Data Analysis Plan

A timeline-based coding sheet will be used to mark occurrences of each observable behavior using the defined codes. Behavior frequency and sequence will be analyzed. Patterns will be extracted to identify user difficulties. Findings will inform design recommendations for improving the user interface.