

Appendix B

Correspondence Between Initial Concepts and Sample Quotations

Initial Concept	Sample Quotations
Frequent reminders(A ₁)	"During study, pop-up ads or instant messaging tools keep jumping out with notifications, constantly cutting off my learning progress."
Continuous interruptions(A ₂)	"Right after handling one message, another external task clips in. This continuous interruption makes it impossible to maintain long-term focus."
Frequent switching(A ₃)	"I need to constantly switch my attention between the learning interface and secondary tasks; the frequency is extremely high."
Cognitive restructuring(A ₄)	"After an interruption, I have to invest massive effort into re-straightening the logic chain I was just deriving."
System jumps(A ₅)	"When an interruption requires handling, the system sometimes jumps, causing me to lose the current operational progress."
Task termination(A ₆)	"Due to a sudden emergency, I had to close all simulation windows, which effectively forced a termination of my learning."
Content forgetting(A ₇)	"By the time I come back from handling things, I've completely forgotten which parameter the video was discussing or the meaning of that function."
Difficulty in information processing(A ₈)	"It's exhausting to find the document position I was just reading; it feels like my brain has to 'reload' all that massive logical information."
Lengthy learning process(A ₉)	"To find the progress, I have to click through several pages and flip through videos; the whole process drags down the total learning pace."
Repetitive operations(A ₁₀)	"I must reconfigure the code environment, remount experimental datasets, or even restart server images. It's very time-consuming."
Focus recovery(A ₁₁)	"Regaining that deep state of programming focus is a real waste of time; this operational restructuring is a real headache."
Reduced focus and cognitive jumping(A ₁₂)	"Looking at code after an interruption, my eyes are seeing it, but my brain isn't processing; my attention just won't stay focused."
Browsing other information(A ₁₃)	"Because my train of thought was broken, I find myself checking other websites or clicking unrelated content, making it even harder to return to studying."
Cognitive breakdown(A ₁₄)	"I was focused on learning, and suddenly a message interrupted me. When I returned, my mind was blank, and I became anxious and didn't want to study anymore."
Difficulty in information processing(A ₁₅)	"The more I rush to find my train of thought, the more those formulas seem incomprehensible, leading to a deep sense of frustration."
Lengthy learning process(A ₁₆)	"It feels like I'll never finish; every time I get into a state, I'm disturbed. This endless tug-of-war leaves me very fatigued."
Learning progress achievement(A ₁₇)	"Because the interruption and recovery take so much time, a course I planned to finish in two hours ended up taking the whole afternoon and

	still wasn't done."
Exam scores(A ₁₈)	"The foundation wasn't solid; these interruptions led to a fragmented understanding of key points, and I performed poorly on the final in-class quiz."
Skill mastery(A ₁₉)	"Although I finished the course, my thoughts were always jumping, and I feel I haven't truly mastered that programming skill."
Knowledge mastery(A ₂₀)	"This fragmented learning has led to a poor systematic understanding of the knowledge; the points just don't connect."
Skill application ability(A ₂₁)	"When doing the project, I realized I still didn't know how to use that model, simply because I was frequently interrupted during the initial learning."
Learning transfer effect(A ₂₂)	"The learning was incoherent; now, trying to apply this knowledge in a different scenario, I have no idea how to be flexible."
Task interruptions tolerance(A ₂₃)	"If the platform cannot provide progress saving at these interruption moments, my patience with it will completely disappear."
System stability(A ₂₄)	"The platform's own pop-ups or lags are interruptions themselves, making me worried about the system's stability."
Course coherence(A ₂₅)	"Poorly organized video segments combined with frequent external distractions made the overall coherence of this course feel terrible."
Notification blocking(A ₂₆)	"Before class, I usually mute my phone and tidy up the environment. Even if I get interrupted during class, it's not easy to break my rhythm, and I feel like I can get back on track quickly."
Information disconnection(A ₂₇)	"Even if I leave briefly, I can quickly bridge the information chain with my notes, preventing myself from becoming disconnected from the learning content."
Autonomous arrangement(A ₂₈)	"I proactively adjust my learning pace based on my state; even if interrupted, I can resume progress in an orderly fashion."
