Variables Used in the Analysis.

Category	Variable	Description	Scale or Range
Demographics	Age	Self-reported age group	Young / Middle / Older
	Gender	Self-identified gender	Female / Male / Non-binary
	Race	Self-identified race/ethnicity	Categorical
	Academic/Professional Status	Current academic or work role	Categorical
	Programming Level	Self-rated programming level	Beginner / Intermediate / Advanced
	Coding Experience	Years of programming experience	0–1 / 2–5 / 6+
Behavioral Features	Learning Time	Time-on-task during learning (z-scored)	Continuous (sec; z-score)
	Queries	Number of queries during learning	Count (0–∞)
	AI Experience (General)	Frequency of general AI use	Likert (1–5)
	AI Experience (Coding)	Frequency of AI use for coding tasks	Likert (1–5)
Experimental Setup	Tool	Learning condition	LLM / Non-LLM
	Baseline Knowledge	Pre-test knowledge score	0–15
	VulnCategory	Assigned vulnerability category	1 / 2
Dependent Variables	LearningGain	PostScore – PreScore (per dimension)	Integer (–3 to +3)
	OverallGain	Sum of gains across all five dimensions	Integer (–15 to +15)
	Efficiency	OverallGain / Learning Time (z-scored)	Continuous (z-score)