Table 1: Cognitive Frameworks in Human-Computer Interaction (HCI)

Framework	**Key Concept**	**Design Implications**
Mental Models	Users' internal understanding of how a system works, shaped by prior experiences.	Use familiar design patterns; provide clear feedback to align with user expectations.
Distributed Cognition	Cognitive processes extend to tools, artifacts, and others in the environment.	Design interfaces as cognitive aids; support collaborative tasks with seamless information flow.
Gulfs of Execution and Evaluation	Gaps between user intentions and actions (execution) and interpreting system output (evaluation).	Intuitive controls to minimize execution gulf; clear feedback for evaluation gulf.
Information Processing Model	Human cognition as perception, processing, and action, with limits like working memory.	Capture attention with salient cues; enable recognition over recall; provide memory aids.
Schema Theory	Cognitive structures organizing knowledge to guide perception and behavior.	Use familiar elements to tap into schemas; consider cultural/individual differences.
Cognitive Load Theory	Manages intrinsic, extraneous, and germane cognitive load during tasks.	Simplify interfaces to reduce extraneous load; optimize learning-related load.
Activity Theory	Interaction as a socially/culturally situated activity involving users and tools.	Design for social practices; consider cultural norms in interface design.
Intuitive Interaction Framework	Interfaces feel intuitive by leveraging prior experience and natural cognition.	Use familiar controls; balance intuitive and analytical interactions based on task.