

Figure 1: CogBench-RAG Framework

Human Memory Phenomena

Encoding Specificity
(Tulving & Thomson, 1973)

*operationalized
as*



CogBench-RAG Benchmark Modules

Context-match vs.
mismatch retrieval

Fan Effect
(Anderson, 1974)

*operationalized
as*



Accuracy vs. entity
association count

Interference
(Underwood, 1957)

*operationalized
as*



Phase 1 vs. Phase 2
fact retrieval

Serial Position
(Murdoch, 1962)

*operationalized
as*



Retrieval accuracy by
indexing position

Retrieval-Induced
Forgetting (Anderson+, 1994)

*operationalized
as*



Unpracticed item access
after category practice

→ **Cognitive Alignment Score (CAS) per system**