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Using Generative AI to Support Retrieval Practice

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Retrieval practice robustly enhances long-term learning relative to rereading, but students struggle to effectively implement retrieval-based activities at scale. The present study examines whether generative artificial intelligence can enable retrieval practice by generating questions with feedback on text passages. Texts were assigned to either rereading or AI-supported retrieval practice conditions. In the retrieval practice condition, students answered AI-generated questions about the readings and received genAI feedback. We assessed learning with multiple-choice or short answer tests either immediately after study or following a delay. Consistent with prior research on retrieval practice, at a delay, learners in the AI-supported retrieval practice conditions answered more questions correctly than students who reread the material. These findings suggest that generative AI can effectively instantiate retrieval practice and may offer a scalable tool for promoting durable learning in educational contexts.