



Students who engage more frequently with Sherpath® AI show *greater score improvement* on HESI® Custom Exams



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A 2025 study examined the association between Sherpath AI usage and performance on HESI Custom Exams in an adult health nursing course at a public university in the southeastern United States. The analysis included 5,599 unique Sherpath AI queries submitted by 59 prelicensure students. Queries were classified using Bloom's taxonomy and analyzed alongside students' HESI scores across up to three exam attempts. **Students who interacted more frequently with Sherpath AI demonstrated substantially larger gains on their HESI exam scores.** High-use students improved an average of 400 points between their lowest and highest exam scores, compared with 194 points among low-use students.



Score improvement by Sherpath AI usage quartile

Student data was divided into four quartiles to understand the spread and distribution of Sherpath AI usage. Average HESI Custom Exam scores increased consistently across quartiles:

- Q1 (≤ 12 queries): 194 points
- Q2 (13–41 queries): 232 points
- Q3 (42–132 queries): 291 points
- Q4 (≥ 133 queries): 400 points

Students' scores in the highest usage quartile improved more than 200 points above those in the lowest quartile, demonstrating **a strong, consistent association between Sherpath AI engagement and HESI Custom Exam outcomes.**

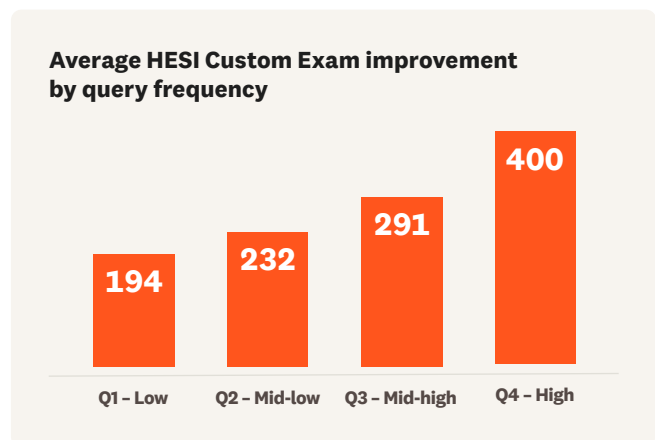


Figure 1. Average HESI Custom Exam improvement by query frequency quartile

Key findings

Higher engagement correlates with higher improvement.

Students who submitted more Sherpath AI queries tended to show larger gains on their HESI Custom Exam performance. The trend demonstrates a strong association between consistent AI engagement and improved assessment outcomes.

Frequency matters more than complexity. Queries were categorized according to Bloom's taxonomy (Anderson & Krathwohl, 2001), which includes six hierarchical levels: Remember, Understand, Apply, Analyze, Evaluate, and Create. Although higher-use students submitted proportionally fewer high-level queries (Analyze through Create), they showed the most improvement. This suggests that repeated, practice-oriented interaction may be a powerful driver of learning gains.

Sherpath AI supports all levels of learning. Analysis of Sherpath AI queries showed balanced participation across Bloom's taxonomy, demonstrating that the tool supports a wide range of learning behaviors, from foundational recall to creative synthesis.



Bloom's level	Count of queries	Percent of total queries
Remember	1,588	28.4%
Understand	1,716	30.7%
Apply	1,062	19.0%
Analyze	147	2.6%
Evaluate	162	2.9%
Create	457	8.1%
Multiple-choice*	375	6.7%
Homework*	92	1.6%
Total queries	5,599	100%

*Multiple-choice and homework assignment queries were not included in the Bloom's level analysis.

Key findings

Research insights	Details
Sherpath AI enhances learning outcomes	Higher-frequency Sherpath AI users showed greater average improvement on HESI exams. Consistent AI interaction appears to reinforce learning and support better assessment outcomes.
Sherpath AI supports all levels of learning	Sherpath AI supports foundational recall through higher-order reasoning, aligning with nursing education standards.
Sherpath AI offers actionable performance insights	Engagement data highlight study behaviors associated with improved results. These insights can support faculty decision-making.
Consistent engagement matters	Findings highlight that repeated, focused use of Sherpath AI correlates with stronger performance results across HESI assessments.

Sherpath AI's retrieval-augmented generation (RAG) technology enables students to engage in personalized questioning and feedback. This study provides early evidence that consistent engagement with AI-driven learning tools like Sherpath AI is associated with meaningful improvements in HESI Custom Exam performance and provides valuable insight into student behavior.



