

Background

- Growth mindset theory postulates that one's baseline qualities can be improved through effort, strategy, and guidance from others.¹ Individuals who exhibit a growth mindset embrace learning opportunities, effort, and progress towards improvement, while people with a fixed mindset believe basic qualities are unchangeable and generally resist learning opportunities and challenges for fear of failure or judgment.¹
- Emerging research indicates that students with a growth mindset may have better clinical reasoning skills than their peers.²
- Clinical reasoning (CR), a skill required by the Accreditation Council for Pharmacy Education Standards, requires navigating uncertain or ambiguous situations to problem-solve and apply higher-order thinking.³⁻⁴ However, literature suggests students have a difficult time in these situations.⁵⁻⁸ This is especially concerning within pharmacy experiential education given its less structured learning environment and presents a critical need to improve student CR skills.

Methods

- A novel questionnaire was developed and validated to measure mindset using exploratory and confirmatory factor analyses (EFA, CFA).
- The questionnaire was based on growth mindset theory and adapted to pharmacy education with input from student pharmacists via focus groups in February 2023.
- Inductive qualitative analysis was used to identify themes for inclusion in the questionnaire. The questionnaire was pilot tested in March 2023 with a 10% convenience sample of second-year students and refined as needed.
- A Script Concordance Test (SCT) is considered the gold standard measurement of CR and was developed to measure student pharmacist CR skills. The mindset questionnaire and SCT were administered via one survey to measure growth mindset and CR among students enrolled in medication therapy management rotations through AdhereHealth across three pharmacy institutions: The University of Tennessee, Creighton University, and Ohio Northern University.
- Survey data was analyzed using Chi-squared tests, t-tests, and Wilcoxon rank sum tests. Pearson's correlation analysis was used to explore the relationship between mindset and SCT scores.

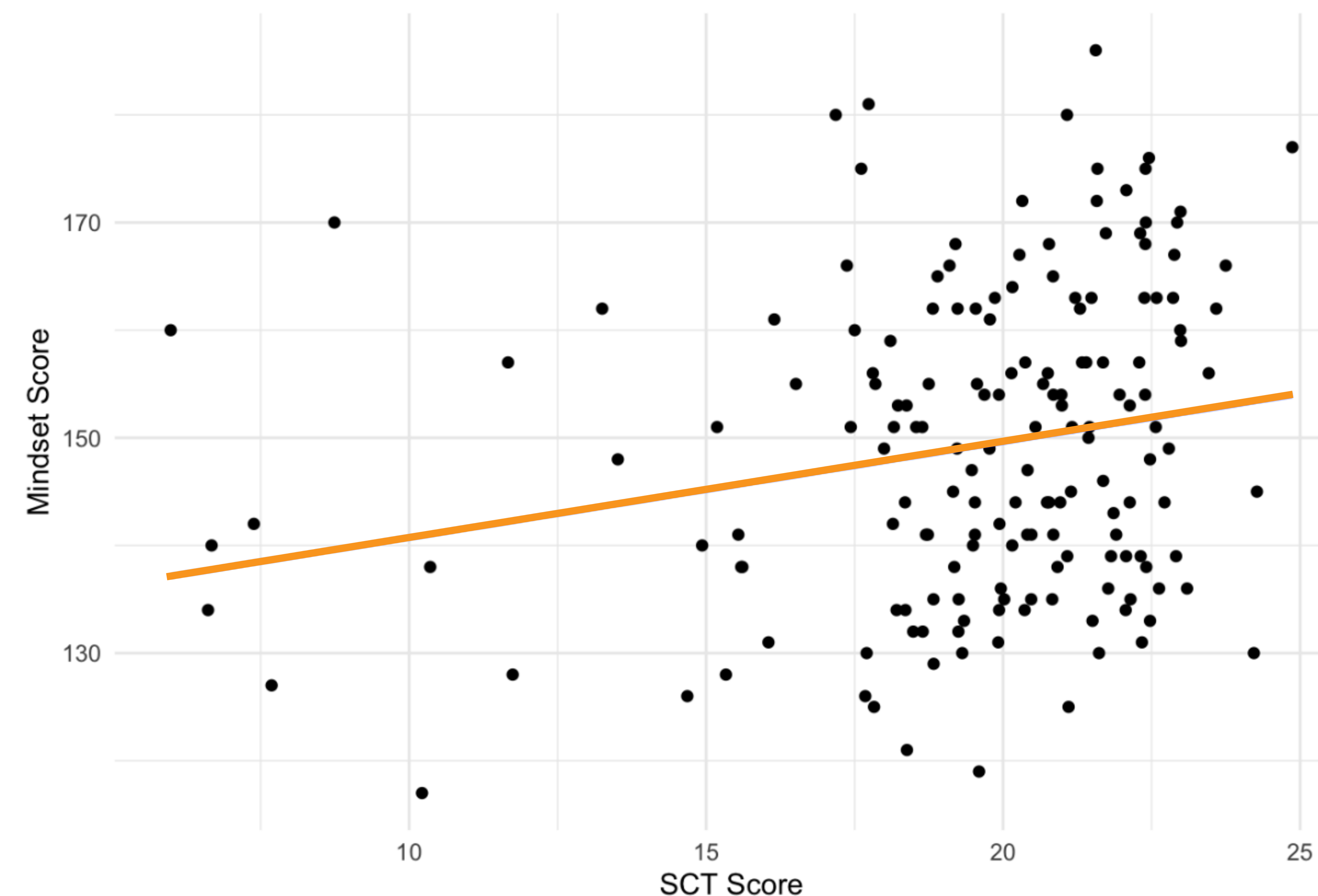
Objective

- To explore the correlation between growth mindset and clinical reasoning among student pharmacists in experiential education.

There is a positive correlation between student mindset and clinical reasoning.

A growth mindset may help students develop clinical reasoning skills and adapt in experiential education environments.

Figure 1. Correlation Between Mindset Score and SCT Score



Results

- 8 second-year UT students participated in focus groups, and qualitative analysis yielded a 61-item mindset questionnaire.
- 46 second-year students at UT completed the initial piloted questionnaire in March 2023.
- EFA resulted in 7 factors (Table 1), and 13 questions were eliminated before dissemination of the revised survey.
- 170 IPPE and APPE students completed the final survey between April and November 2023 across the three institutions.
- According to CFA, the mindset questionnaire demonstrated high validity and reliability.
- There was an observed positive correlation between mindset and SCT CR scores ($p < 0.01$).

Table 1. Mindset Questionnaire Factors

Factor	Mindset Themes	No. of Questions
1	Resilience, setbacks, challenges, failure, effort	15
2	Innate ability, perfection, performance vs. mastery, learning, progress	7
3	Blame, excuses	4
4	Learning opportunities, learning new things	7
5	Feedback, criticism, learning from others	7
6	Fear of being judged	5
7	Asking questions	3

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Disclosures

- This research was funded by the AACP New Investigator Award grant.