

Thinking Again About Critical Thinking

How is critical thinking defined?

Complex thought process that questions one's own beliefs or natural tendencies¹

Incorporates distinct skills, like analysis, inference, and explanation²

Where is it assessed in the curriculum?

Related to skills in pharmacy education such as problem-solving, therapeutic decision-making, and clinical reasoning³

Objective

To compare critical thinking (CT) scores from a standardized instrument with performance in courses with a defined CT-related skill attached.

Methods

Ten campus-based courses mapped to the ACPE 2016 Problem-Solving Outcome were compared with student CT subscores on the Educational Testing Service Proficiency Profile (ETSPP). The ETSPP was administered during the final semester before advanced pharmacy practice experiences in Spring 2021-Fall 2022.

Using Pearson correlation, CT subscores were compared with

- Overall average grade for all courses
- Individual course grades
- Average grades of discipline-grouped courses (math, science, administrative, and clinical)

Correlations of groups of students who passed or failed were compared for significance using Fisher's transformation.



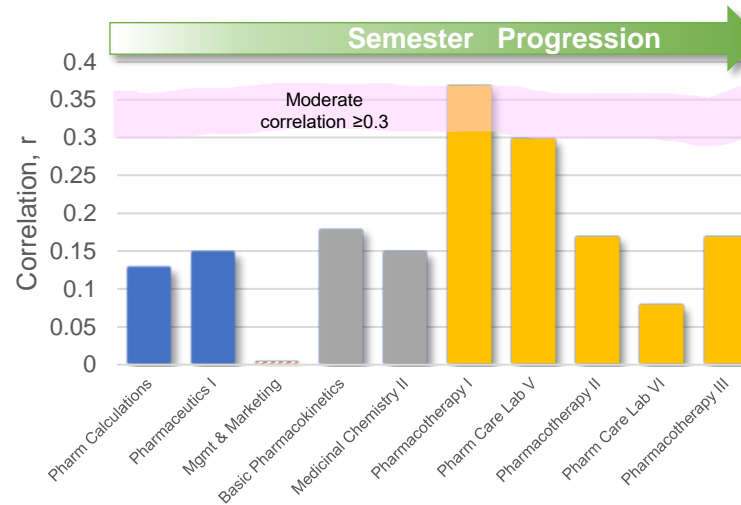
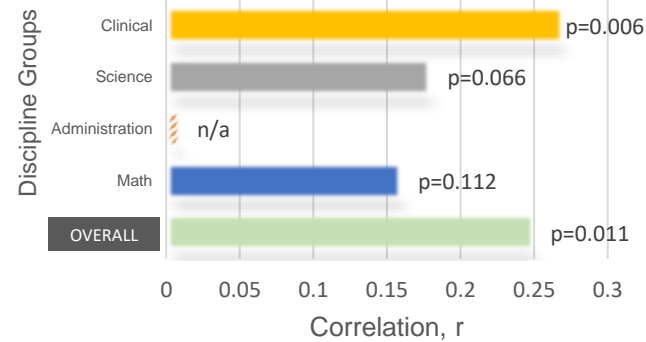
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Results



	Passed All	≥ 1 Failure
n	86	14
Correlation, r	0.12	0.2
Test for interaction	$Z_{\text{observed}}=0.28, \text{NS}$	

Conclusions

Grades in clinical courses as a group had the strongest, albeit a weak correlation with CT subscores

Early clinical courses moderately correlated with CT subscores, while later, similarly designed clinical courses did not

CT subscores did not discriminate between those who passed or failed CT-related courses

The results of this study bring to question how critical thinking skills are applied or assessed within the curriculum or if course grades accurately reflect these skills

Future Directions: Administer ETSPP in 1st year and pair results with 3rd year

1. Paul, R. & Elder, L. *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*. Prentice Hall, 2001. 2. Richards JB, Hayes MM, Schwartzstein RM. Teaching Clinical Reasoning and Critical Thinking: From Cognitive Theory to Practical Application. CHEST. 2020;158(4):1617-28. 3. Persky AM, Medina MS, Castleberry AM. Developing Critical Thinking Skills in Pharmacy Students. Am J Pharm Educ. 2019;83(2):161-70.