



# Evaluating the Effect of Exam Remediation on Retention and Progression

Rachel Lazim PharmD, BCCCP, BCNSP, Don Branam PharmD, BCPS, FASHP

South College School of Pharmacy, Knoxville, TN



## Conclusions:

- Exam remediation process helped students:
  - Improve study skills
  - Improve retention of course material
- Exam remediation process increased mean exam score by 4.6 points
- Exam remediation process resulted in 50% fewer comprehensive re-examinations at end of course compared to previous year

## Background:

- SCSOP is a 3-year accelerated, year-round PharmD Program with 9-week quarters in P2 year
- Students struggle to pass condensed pharmacotherapy courses
- No remediation process to allow students to learn from mistakes
- Students with final grade 60-69.4 attempt re-examination to pass
- Students allowed two re-examination attempts per AY
- Between quarter or summer remediation session not feasible
- 6-8 re-examinations every year in Infectious Diseases in P2 fall quarter
- Exam remediation piloted during Infectious Diseases in fall quarter 2023

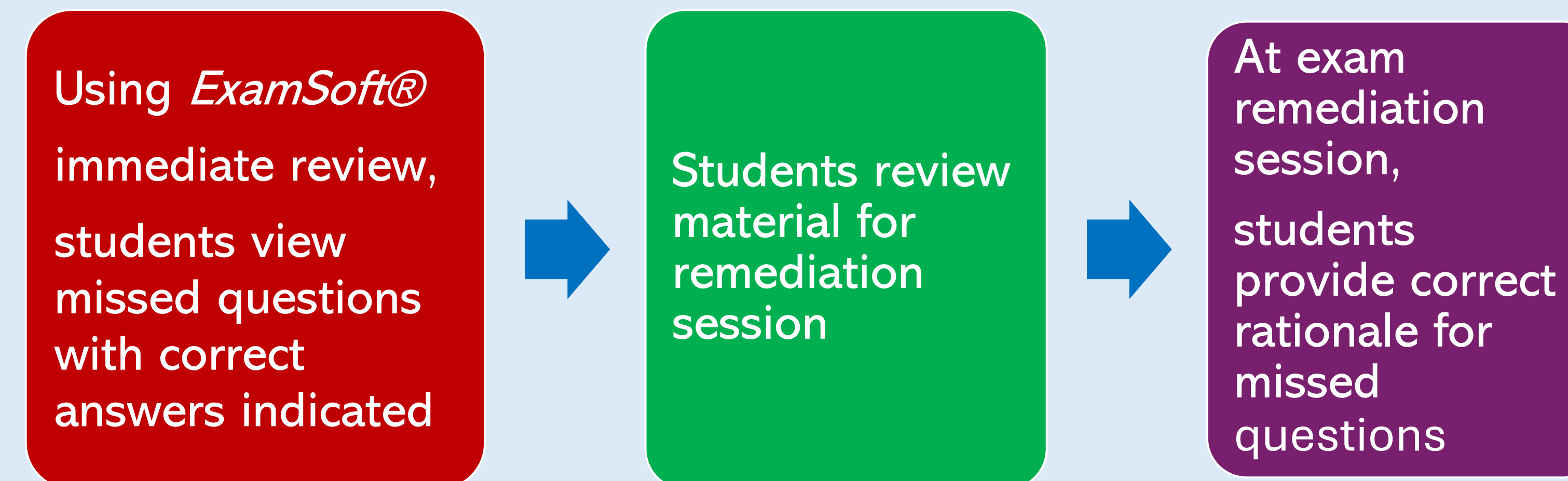
## Objective:

- Determine whether in-course exam remediation process decreases percentage of students needing re-examination to pass course
- Evaluate student perception of impact of exam remediation process on retention of course material, study skills, and avoidance of course failure

## Methods:

- IRB-approved study comparing P2 student performance in Infectious Diseases in 2022 (pre-implementation) to 2023 (post-implementation)
- Immediate review enabled for students to view missed questions with correct answers to study for remediation session
- Exam remediation replaced traditional exam review
- Remediation session scheduled within week of exam. At session:
  - Students given individual exam taker result report
  - Complete remediation “quiz” in *Canvas®* New Quizzes using lockdown browser
  - Provide rationale for correct answer for each question missed
  - Answer reflection question about preparation for exam
  - Correct rationales earn 25% of point value added to exam score

## SCSOP Exam Remediation Process



## Impact of Exam Remediation on Mean Exam Scores in P2 Infectious Diseases

	Mean Successful Attempts (%)	Exam Mean Pre-Remediation	Exam Mean Post-Remediation	Δ Mean
Exam 1	12.8/14.7 (87)	73.4	78.2	4.8
Exam 2	10.5/11.7 (90)	79.3	83.4	4.1
Exam 3	12.3/13.3 (92.5)	75.6	80.5	4.9

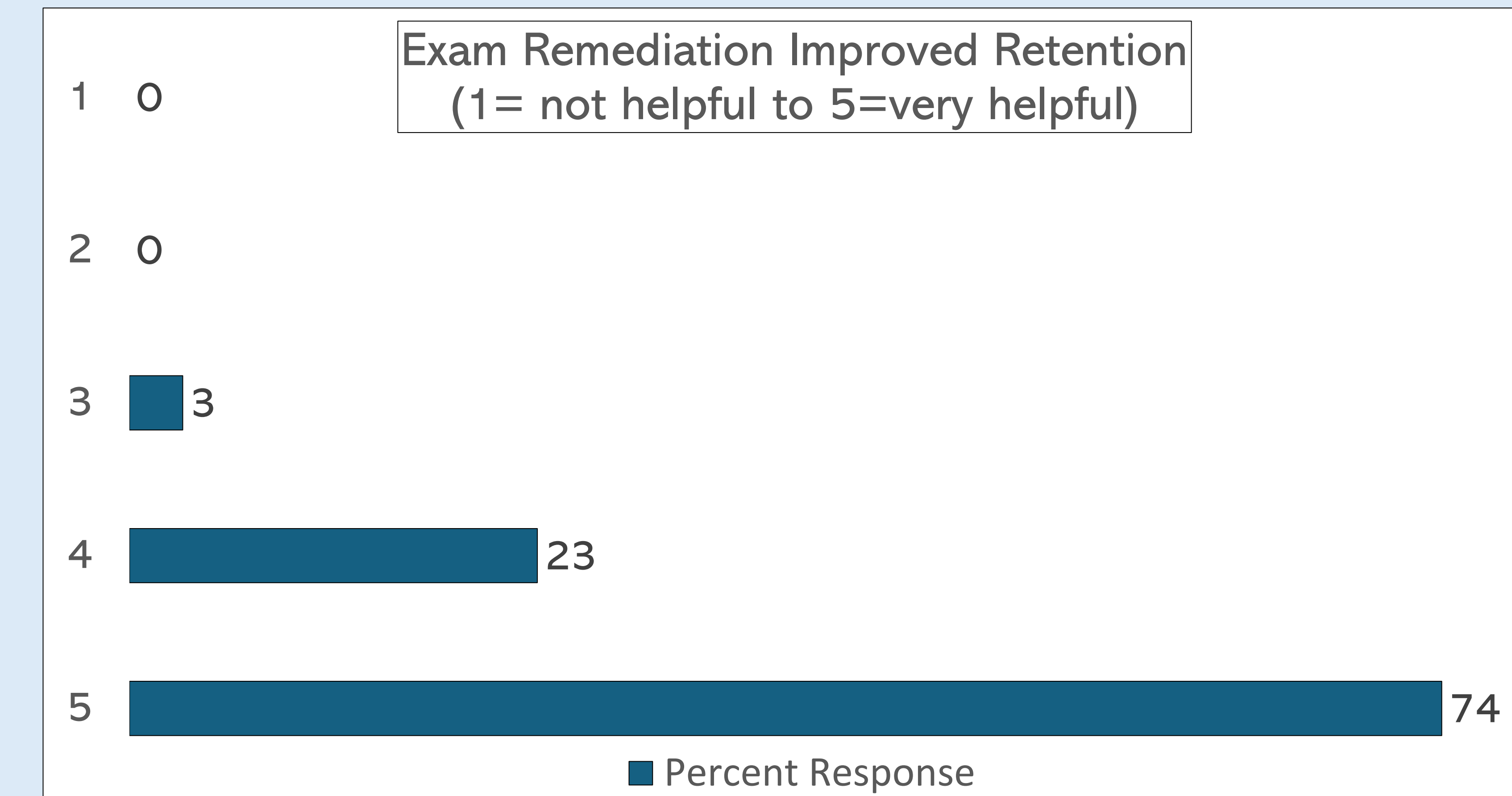
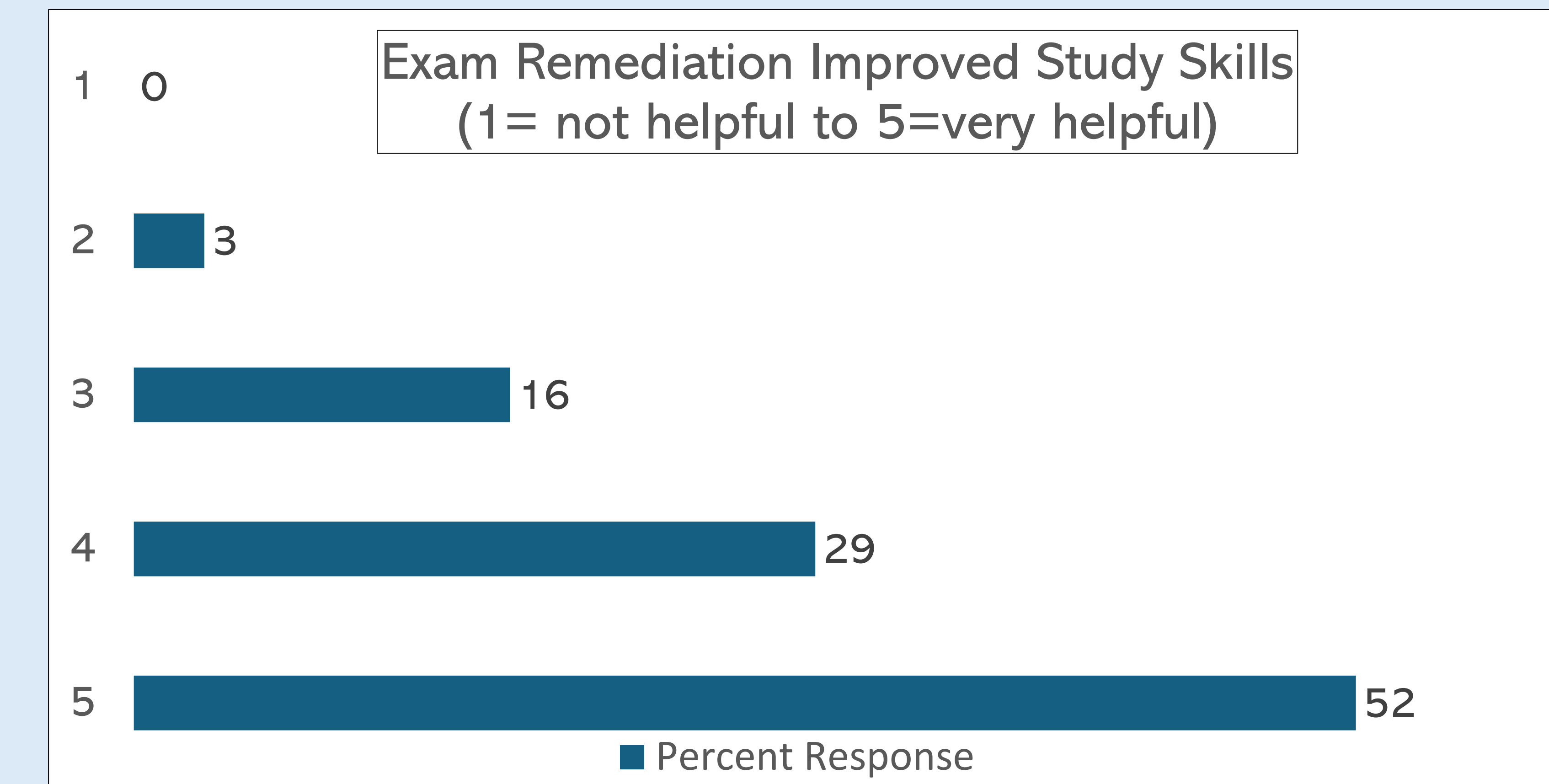
## Impact of Exam Remediation on Re-Examinations in P2 Infectious Diseases

Year	Exam 1	Exam 2	Exam 3	# of Re-examinations
2022 (n=56)	74.5	75	83.5	6 (11%)
2023 (n=46)	78.2	83.4	80.5	3 (6.5%)

## Impact of Exam Remediation on Final Grades in P2 Infectious Diseases

Year	A (%)	B (%)	C (%)	Fail (%)
2022 (n=56)	4 (7)	26 (46)	24 (43)	2 (4)
2023 (n=46)	8 (17)	15 (33)	21 (46)	2 (4)

## Student Perception of Remediation Process



## Challenges:

- Faculty time to grade remediation 3-6 hours per exam
- Inconsistent student effort to prepare for remediation

## Future Directions:

- Expand remediation process to all pharmacotherapy sections and clinical pharmacokinetics for upcoming AY
- Conduct concurrent hybrid/online and on-ground remediation with Class of 2027 (summer 2025)
- Continue monitoring of academic outcomes for all cohorts
- Investigate potential effect of exam remediation on P2 NAPLEX advantage domain scores and NAPLEX first-time pass rate