

Evaluation of a Didactic Examination Retake Process for Preclinical Medical Students

Colleen Talbot, PhD, Edith Sperling, DPT

Western University of Health Sciences, College of Osteopathic Medicine of the Pacific (COMP and COMP-Northwest)

Challenge/Issue:

In an effort to improve student learning, provide opportunities to demonstrate competence, and improve student wellness, WesternU-COMP implemented changes in curricular delivery and assessment beginning with the DO 2022 cohort. These included: 1) moving from a one-pass to a two-pass systems-based approach; 2) cumulative exams at the end of each block; 3) **the opportunity to retake all or part of an exam after an initial unsuccessful attempt.**

Objective:

The aim of this study was to determine if the retake process results in improved student learning to weigh the potential benefits against the additional burden to students, faculty, and staff.

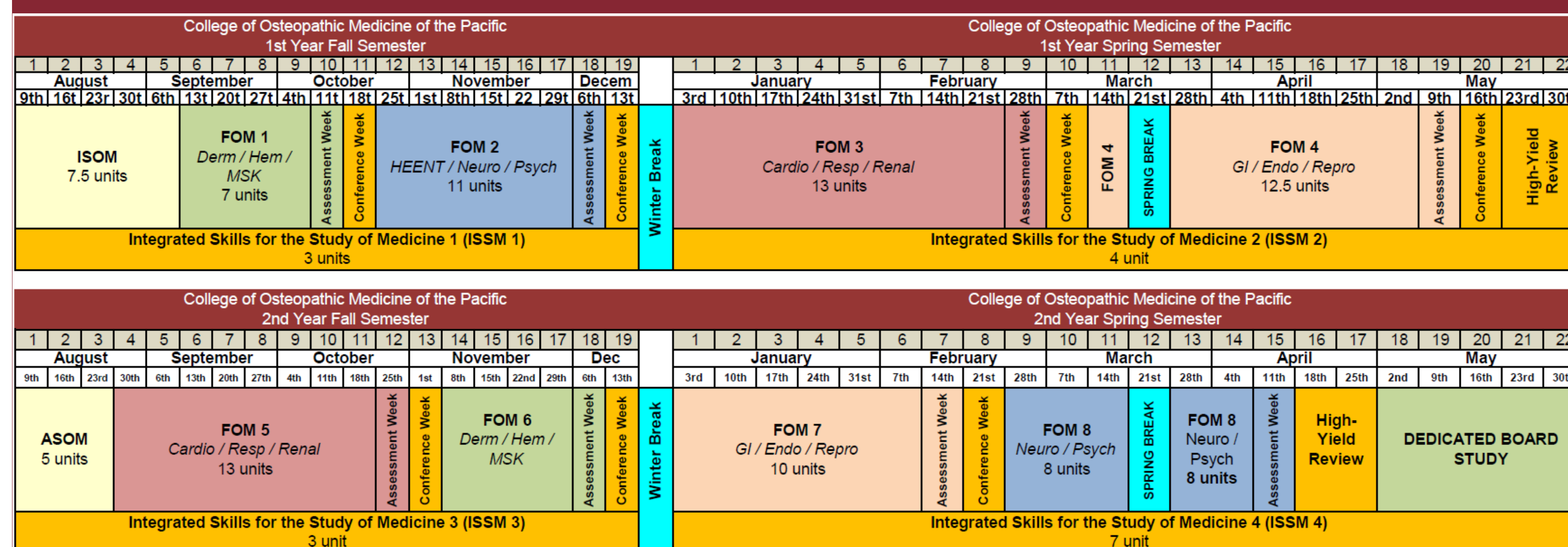
Approach:

Retake exams are offered to students who score <70% on their multiple-choice cumulative block exams. The retakes are scheduled ca. 1-week from the initial exam. Students retake disciplines they did not pass, creating individualized competency-based exams. We looked at the prevalence of retake exams between cohorts, in the 1st vs 2nd year, and between “sister blocks” (groups of organ systems paired across the 1st and 2nd years) with the goal to determine whether retaking an exam in the 1st year helped reinforce foundational content, thus increasing the likelihood of success in the 2nd year sister block. Lastly, we looked at the impact of retakes on Level 1 board performance.

Results:

An average of 98.8±10.5 unique students per cohort, from the DO 2022 through the DO 2025 classes, were required retake exams, representing over 25% of a given cohort. While there was not a statistical difference between retakes in the 1st and 2nd years, there were more in the 2nd year. The majority of students who were required to retake a didactic exam only did so for 1-2 blocks. To determine if retakes are beneficial, scores for individual students who completed both didactic exams in sister block pairs were compared. We found that students who had to retake the year 1 block exam demonstrated increased performance on the corresponding year 2 block exam, on average, ranging from a 1.8% increase to a 12.5% increase in performance relative to the 1st year sister block. In all cases, the average increase in score in the 2nd year block was greater than that seen for students who had low-passed (69.5-73.5%) the corresponding 1st year block. The average exam score for 2nd year students who retook the 1st block in a sister group was not different from students who had initially low-passed the 1st year block. This suggests that students required to retake their didactic exam were able to make up deficits that helped them improve their foundational knowledge going into the corresponding 2nd year block. While retakes may have been beneficial, improving foundational knowledge between the 1st and 2nd year blocks, students required to take ≥3 retakes were more likely to fail COMPLEX Level 1, with 25 of the 79 students with ≥3 retakes failing their 1 attempt at COMPLEX Level 1.

- Targeted retake examinations in the 1st year help reinforce foundational concepts required for 2nd year curriculum
 - This presumably also provides early reinforcement prior to board study
- Tracking the frequency of retake examinations helps identify students in need of additional support prepping for their licensing exams



Figures

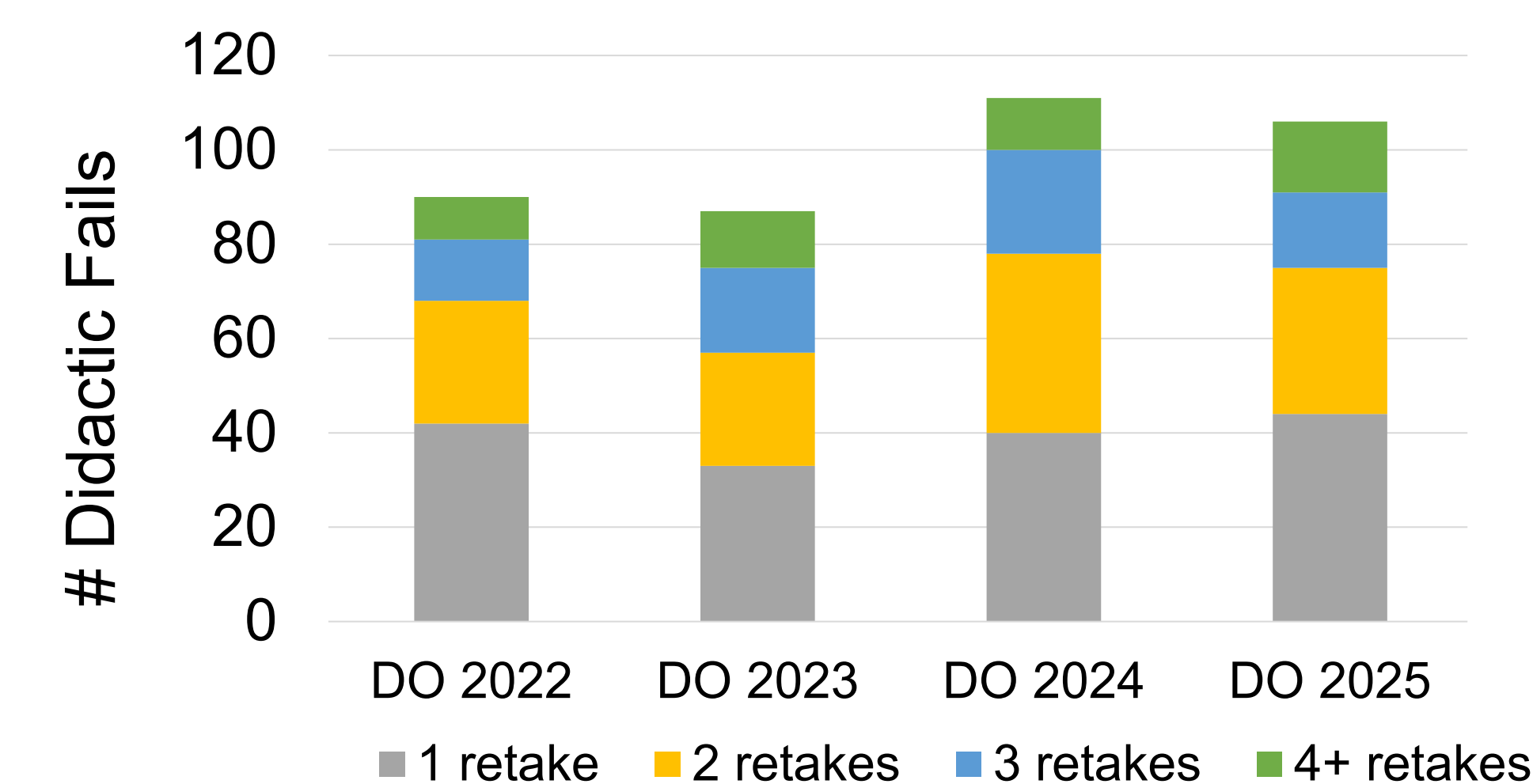


Figure 1: Number of didactic failures (“retakes”) per student by cohort. Of the students requiring retakes, 71.0% (± 4.8%) only need 1 or 2 retakes over the preclinical years; 11.9% (± 2.3%) require 4-6 retake exams.

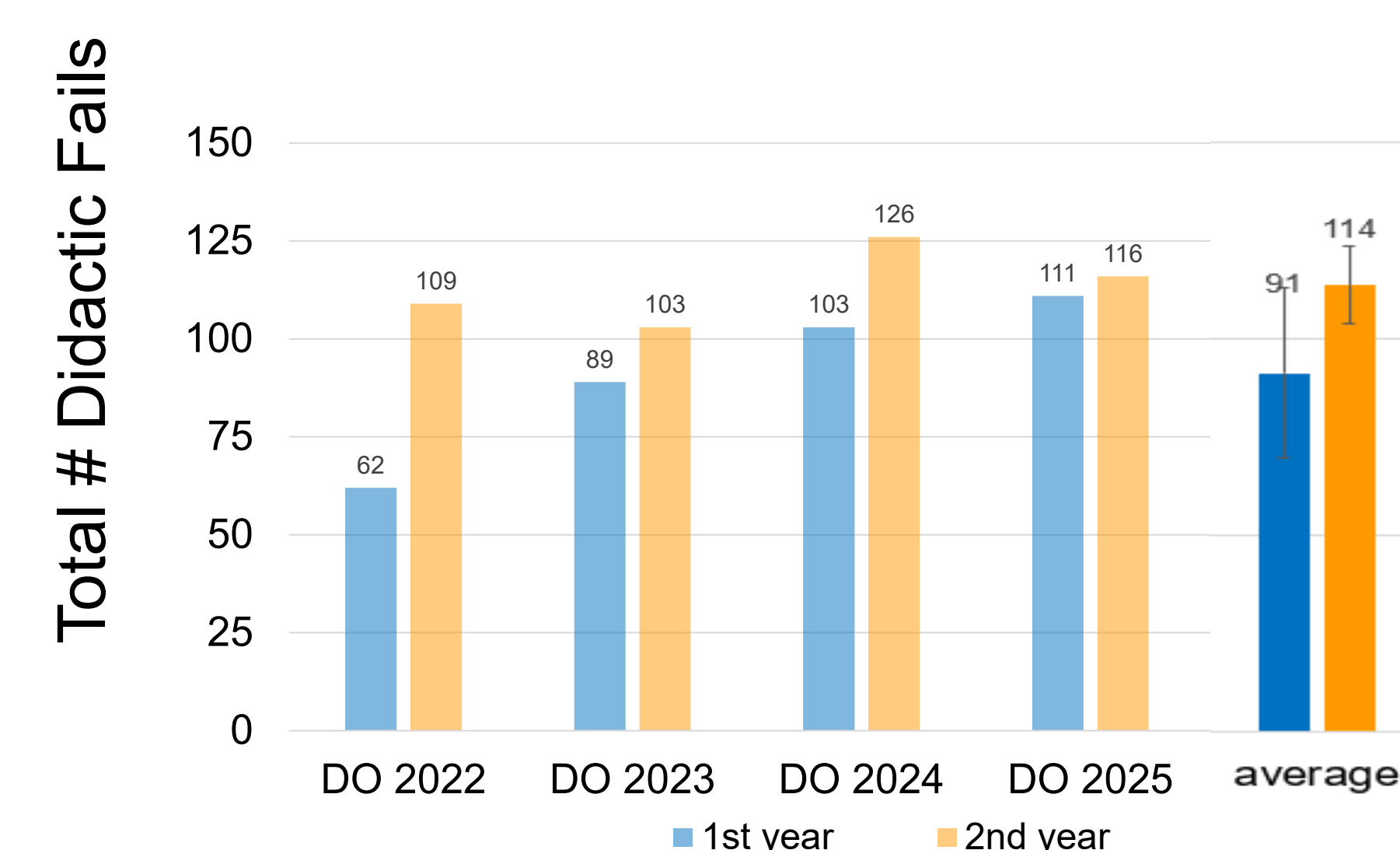


Figure 2: Didactic failures (“retakes”) by year of preclinical curriculum. There were more retake exams given in 2nd year than in 1st year, however, it was not a statistically significant difference.

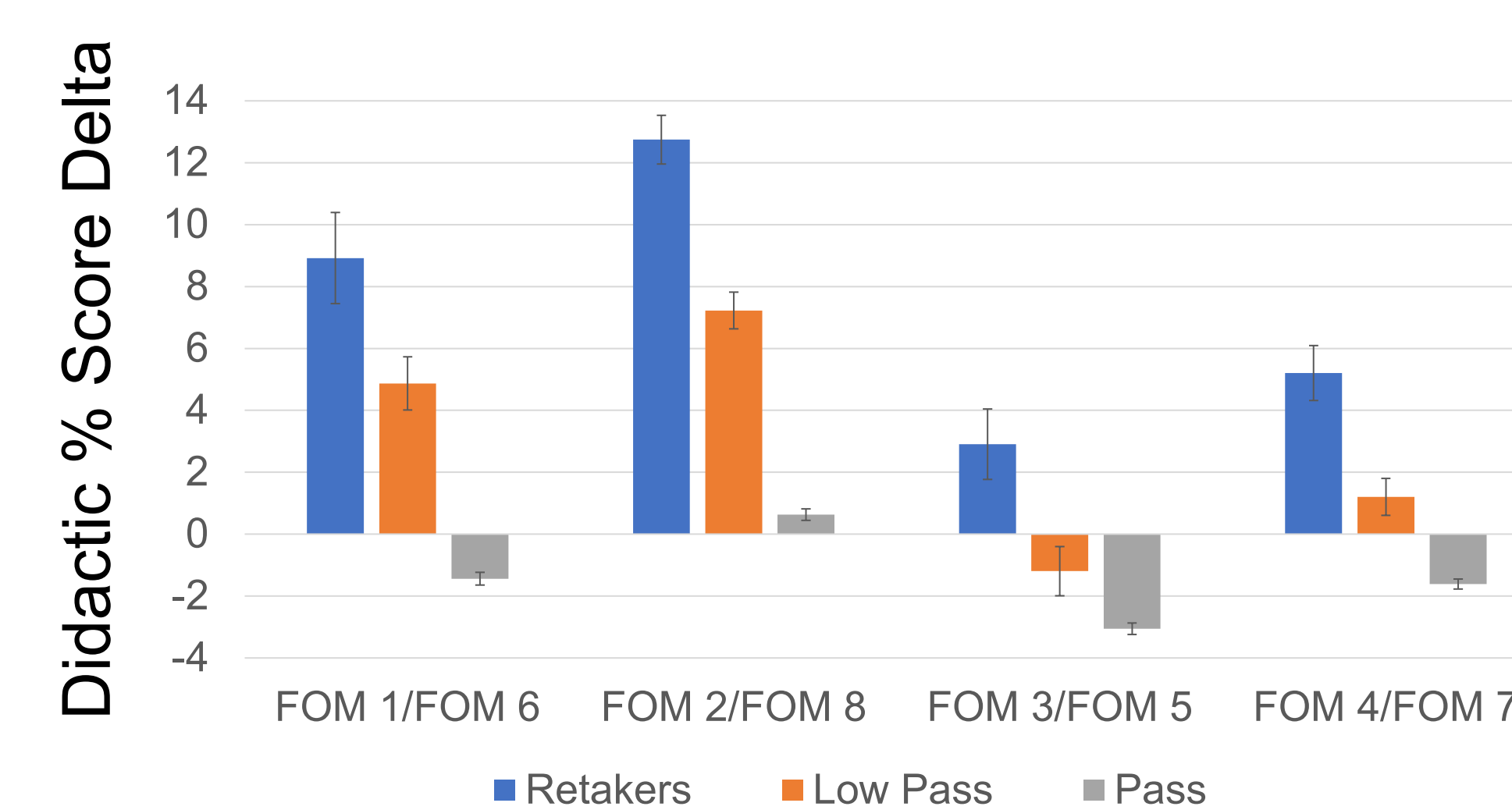


Figure 3: Relative Change Didactic Exam Scores Between 1st & 2nd Year Sister Blocks. Students required to retake a 1st year block typically increased their score in the 2nd year “sister block” covering the same systems.

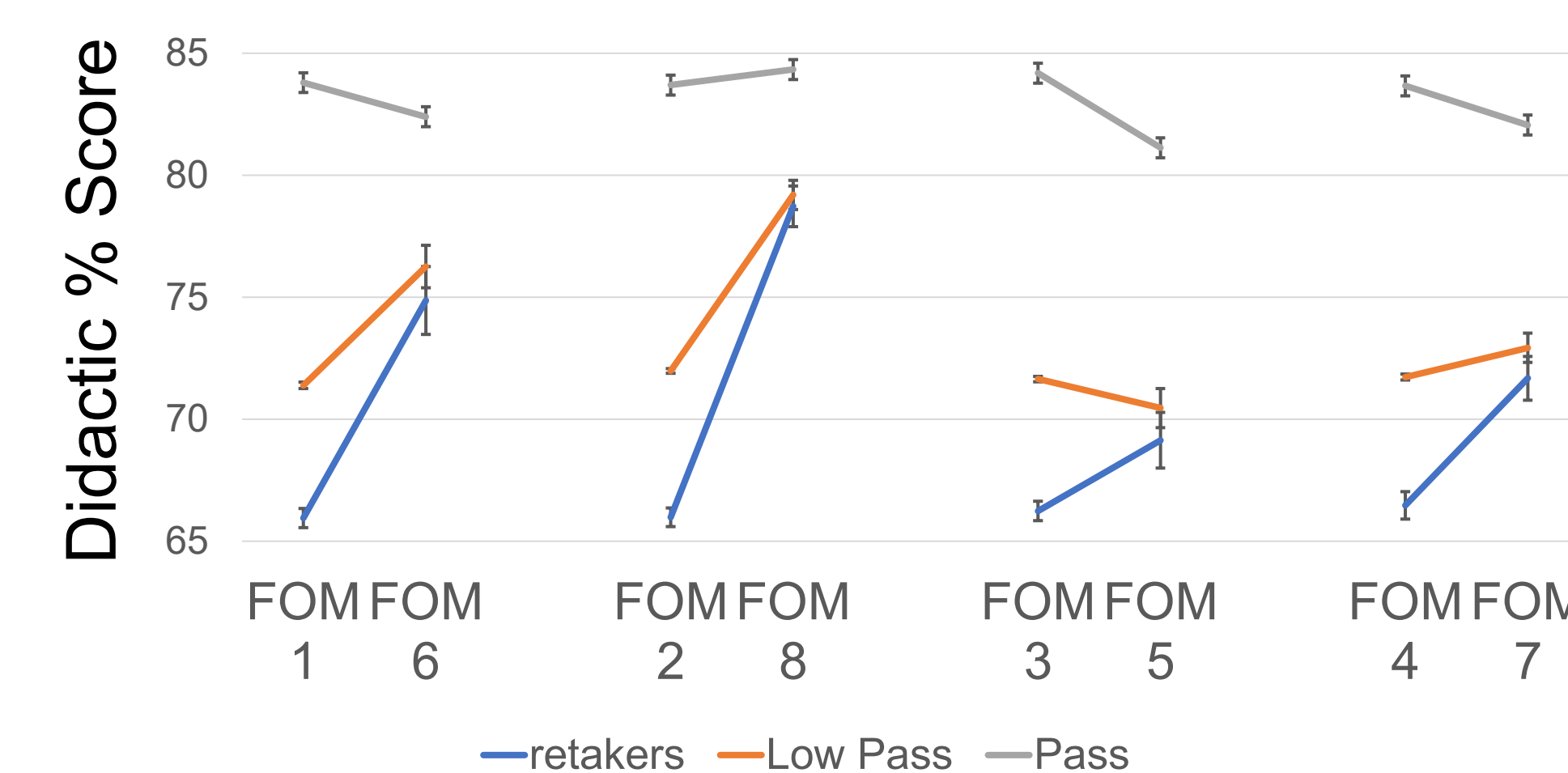


Figure 4: Average Didactic Exam Scores Between 1st & 2nd Year Sister Blocks. Students required to retake 1st year exams scored at about the same level as students who had “low passed” their 1st year exams, often bringing them above the score required to avoid retaking the 2nd year sister block.

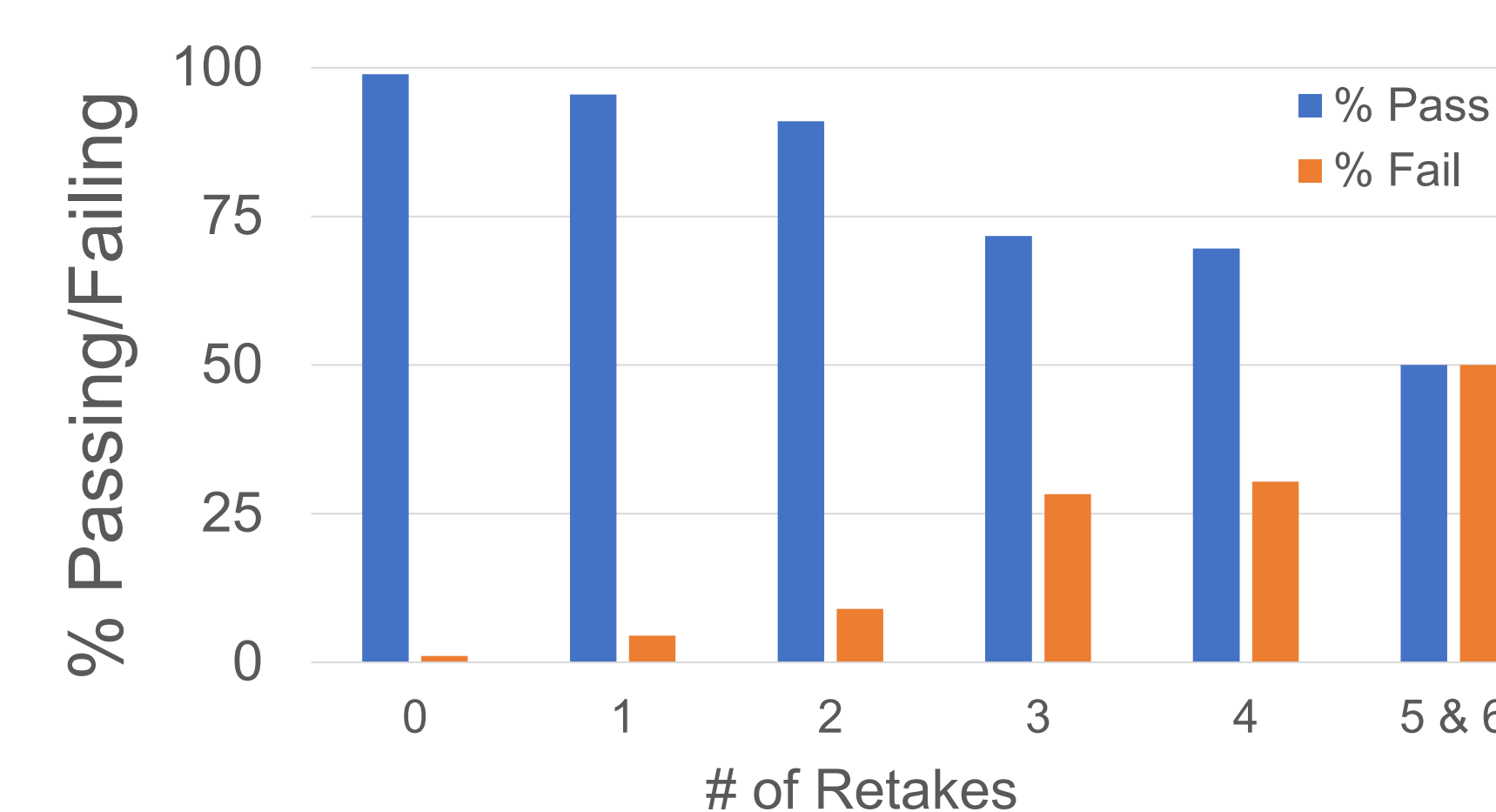


Figure 5: Level 1 Performance and Retakes (DO 2022 - DO 2025). Requiring 3 or more retake exams over the preclinical years significantly increases the likelihood that a student will be unsuccessful on their COMPLEX Level 1.

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