Predictability of NBOME COMSAE and TrueLearn COMBANK mock exams for passing the COMLEX-USA Level 1 exam

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CONTEXT: Passing the COMLEX-USA Level 1 licensing exam is an important benchmark for osteopathic medical students and mock exams are useful in evaluating their readiness. **Our goal is to determine the predictability of scores from specific mock exams and their association with success on the Level 1 exam.**

OBJECTIVE: Determine if specific mock exams can be used as predictors for success on the COMLEX-USA Level 1 exam.

APPROACH: This is a correlational analysis of student performance on two mock exams to determine whether patterns can be identified related to student outcomes on the COMLEX Level 1 exam (first attempt). Data was from the DO 2025 and DO 2026 WesternU student cohorts (n = 641) for whom we had results from all three sets of exams: COMLEX Level 1, the COMSAE ASA 111b (3-digit score), and the full-length institutional COMBANK level 1 mock exam (% score).

We used generalized linear models (GLMs) with binomial distribution and the logit link function (due to the binary response variable) to determine whether the COMBANK and/or COMSAE exams predict pass/fail for COMLEX Level 1 exam.

RESULTS: There was a positive association between performance on the COMSAE and the COMBANK mock exams with the pass/fail status on the COMLEX Level 1 exam.

FIGURES

Figure 2: Summary of the average **a)** COMSAE 111b (3-digit) and **b)** COMBANK (%) exam score by PASS (black bars, n=603) / FAIL (blue bars, n=38) of the COMLEX Level 1 exam across two academic years. Error bars represent 95% confidence intervals around the mean. (*** indicates $P < 0.0001$ from GLMs).

Figure 3: (A) Summary of the association between COMBANK and cumulative GPA and **Figure 3: (B)** the association between COMSAE and cumulative GPA by PASS (black open circles) / FAIL (blue squares) of the COMLEX Level 1 exam across two academic years. Additionally, students who delayed past the internal deadline (not included in the correlation analysis) are indicated by the red circles (if they passed) or red squares (if they failed). Text indicates Pearson's correlation results (including delayed category). The solid lines represent the linear regression, while the gray shaded area indicates the 95% confidence intervals (excluding delayed category). GPA is determined by grades from all pre-clinical courses where a Pass = 80, High Pass = 90 and Honors = 100.
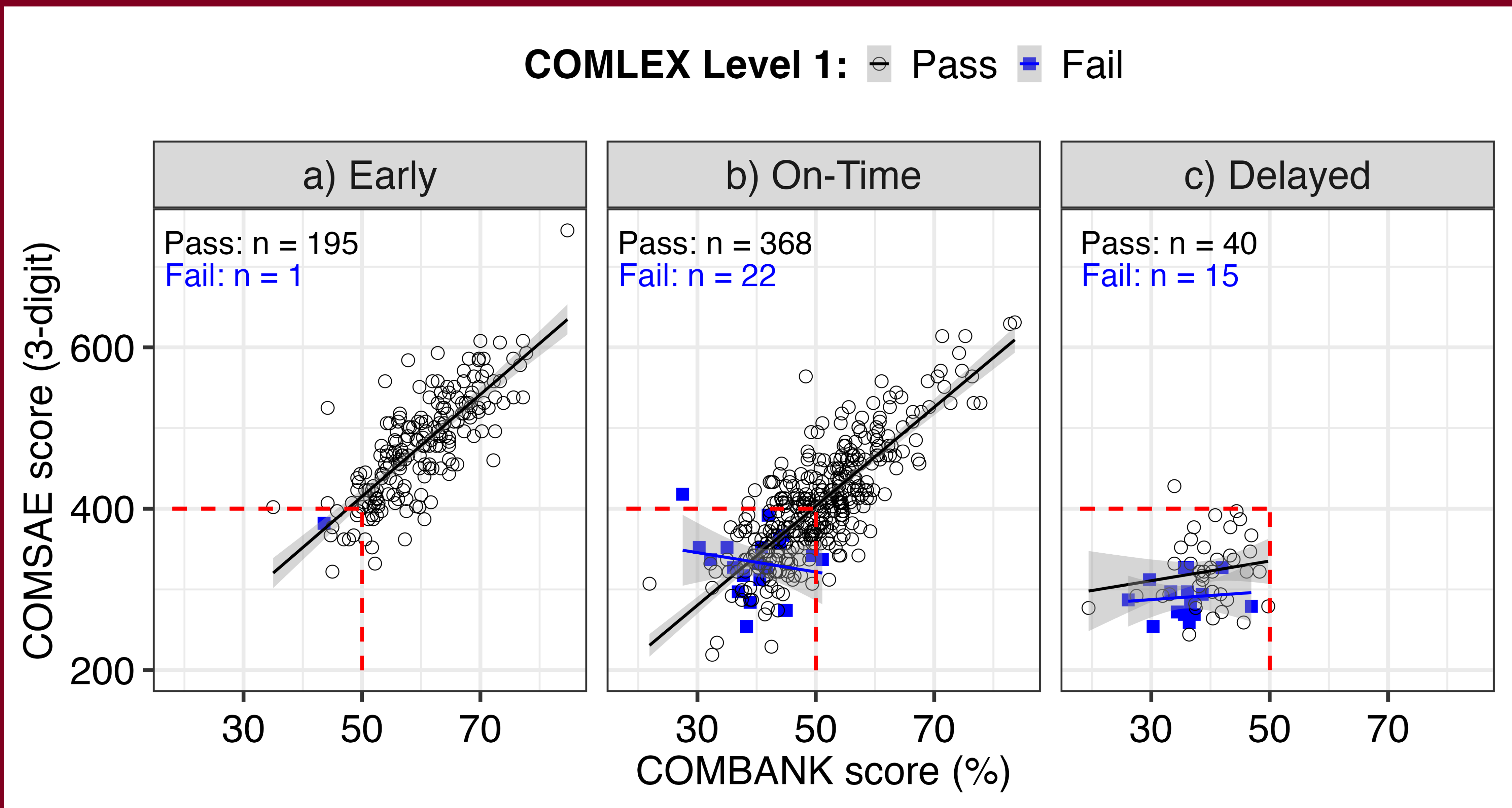

Figure 1: Summary of the association between NBOME COMSAE and TrueLearn/COMBANK score based on the date range for taking the COMLEX-USA Level 1 exam (first time attempt). Text indicates number of students. The solid lines represent the linear regression, while the gray shaded area indicates the 95% confidence intervals. PASS (black, open circles) / FAIL (blue, squares) of the COMLEX Level 1 exam across two academic years and whether students took the COMLEX Level 1 exam: a) **early (May 14th - June 18th)**, b) **on-time (June 19th – July 14th)**, or c) **delayed** past our internal deadline **(after July 14th)**. Red dashed lines represent cut-offs for identifying "at risk" students.

1) Students with strong performance on the mock exams tended to **take their COMLEX Level 1 "early"** and had a **99.5% pass rate**.

2) Students who took their COMLEX Level 1 on time, including those who struggled on the COMBANK and COMSAE, were **typically able to make up their deficits** with a **94.0% pass rate**.

3) Students who delayed past our internal deadline (~July 14th) **were the least successful** on the mock exams and COMLEX Level 1 with a **72.7% pass rate**.
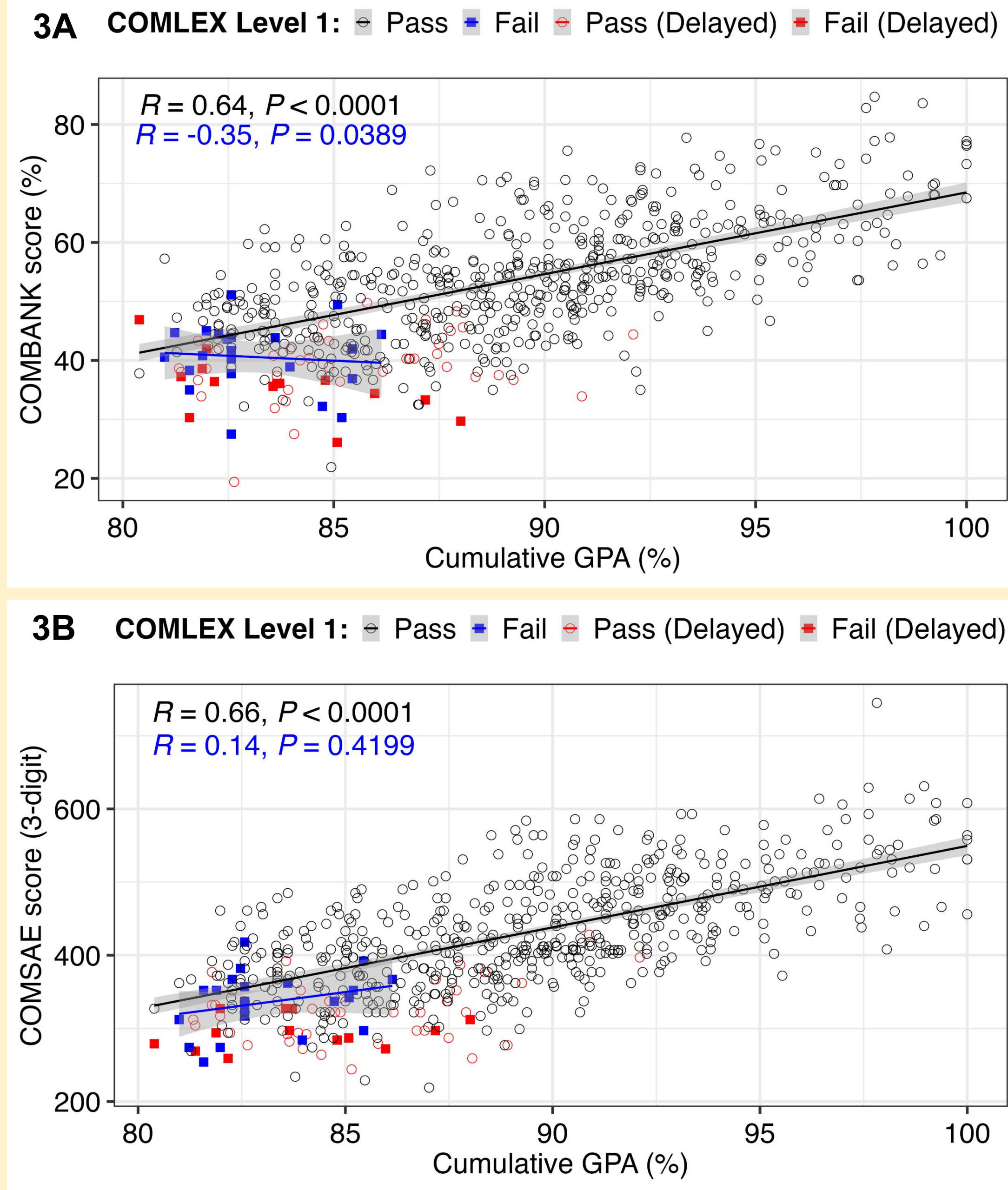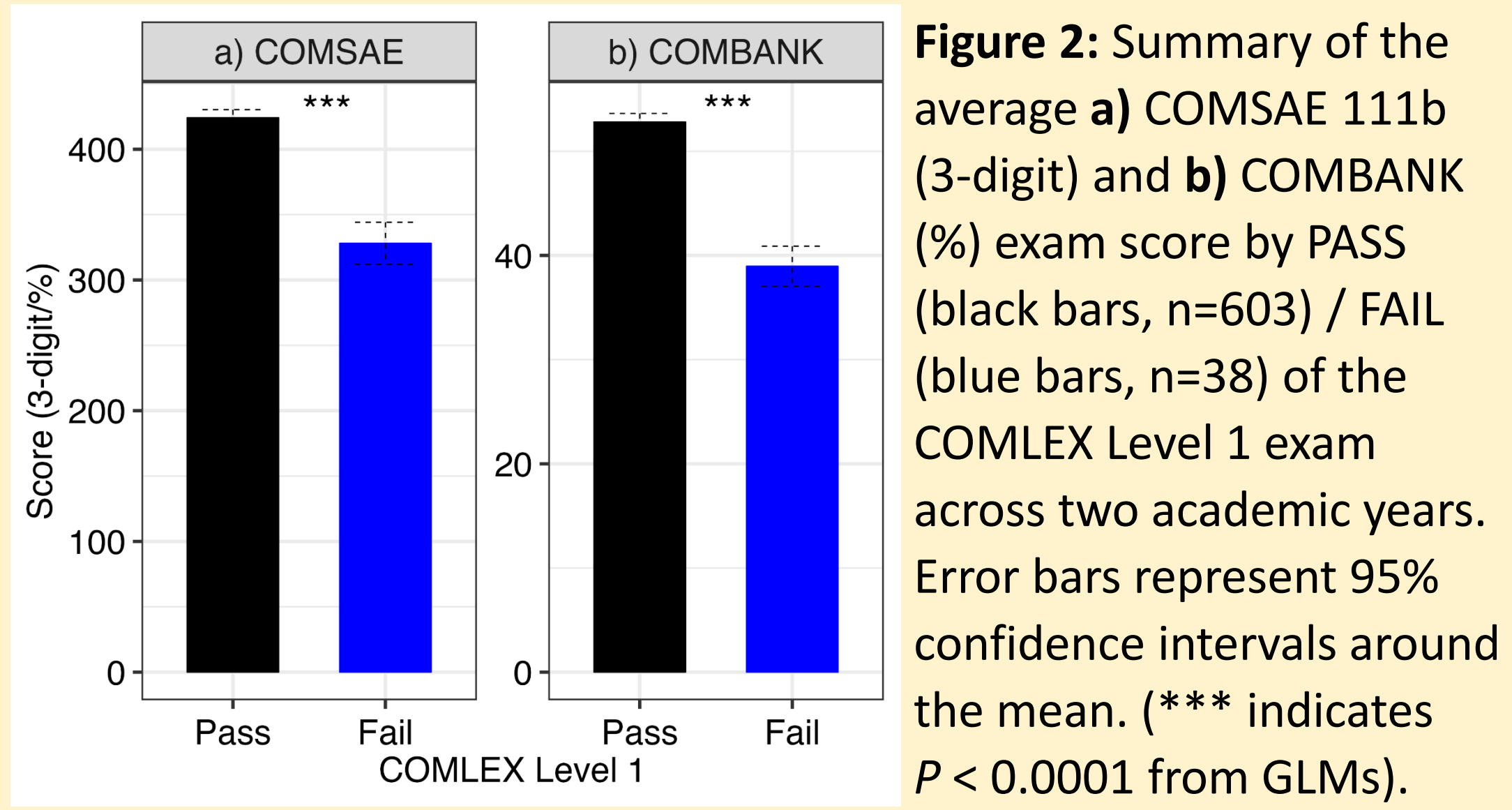
CONCLUSION: We found that, indeed, the COMBANK and COMSAE mock exams did correlate with COMLEX-USA Level 1 performance. With these data, we can inform next year's cohort of the findings and can then determine whether it changes behavior of students regarding preparation for the mandatory mock exams and/or when they schedule their COMLEX-USA Level 1 exam.