Evaluating Practice Readiness After a Curriculum Change Integrating Important 200 Medications into Pharmacotherapeutics Courses

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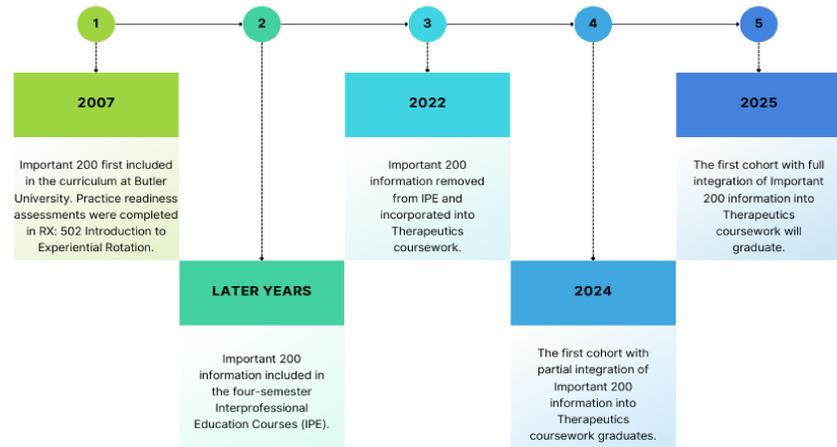
BACKGROUND

At Butler University, the Important 200 medication list is determined and reviewed annually by faculty and preceptors involved in the Experiential Continuous Quality Improvement Committee. The list includes commonly prescribed and over-the-counter medications. Medications are selected based on prevalence and pharmacist involvement in the dosing and monitoring. In the spring of the third professional year, PRAs comprise four exams assessing 50 medications. Students must achieve at least 70% on each exam, failure to do so requires a retake. Students receiving less than 70% on the retake require remediation, delaying the start of APPEs. Additional data collected from these cohorts included Important 200 practice Canvas quiz attempts and performance on 200 Important questions on pharmacotherapeutics exams.

Timeline of the Placement of Important 200 Information in the Butler University College of Pharmacy and Health Sciences Curriculum

1 — 2007
Important 200 first included in the curriculum at Butler University. Practice readiness assessments were completed in RX: 502 Introduction to Experiential Rotation.

LATER YEARS
Important 200 information included in the four-semester Interprofessional Education Courses (IPE).

2 — 2022
Important 200 information removed from IPE and incorporated into Therapeutics coursework.

3

4 — 2024
The first cohort with partial integration of Important 200 information into Therapeutics coursework graduates.

5 — 2025
The first cohort with full integration of Important 200 information into Therapeutics coursework will graduate.

OBJECTIVES

The objective of this retrospective study is to assess the impact of a curricular change with Important 200 medication content on student exam performance and pre-Advanced Practice Pharmacy Experiences (APPE) practice readiness assessments (PRAs).
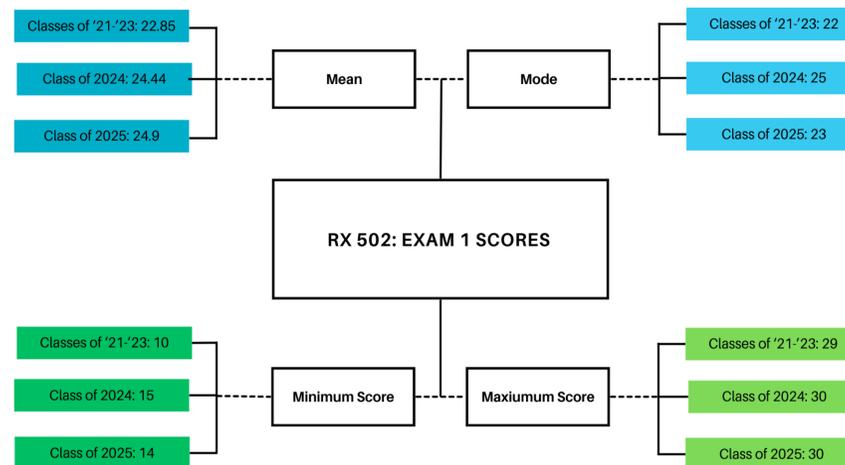
METHODS

- **Inclusion Criteria**: Butler University students enrolled in the Doctor of Pharmacy Program
  - Students who repeated a year were moved to their current cohort
- **Exclusion Criteria**: Students not enrolled in the Doctor of Pharmacy Program for consecutive years.

COURSE INFORMATION

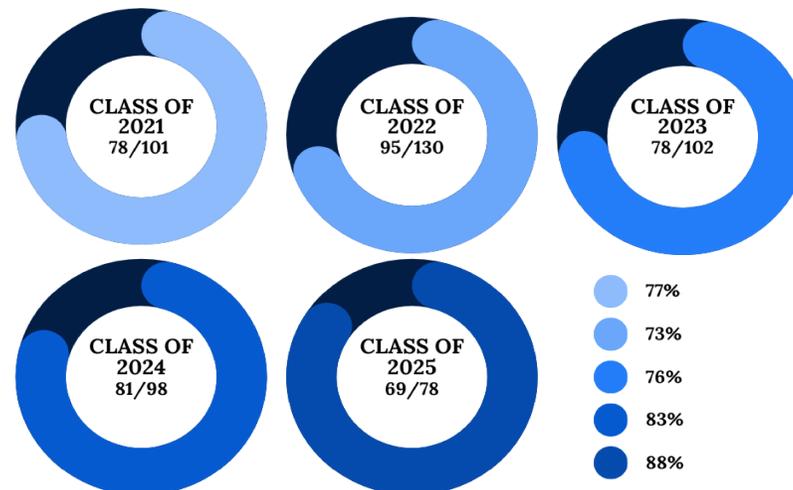| Curricular Year	Course Name	Cohorts with Data
P1	RX416: Self Care 1	Class of 2026
P2	RX416: Self Care 2 RX415 and 414: Therapeutics and Case Studies 1 and 2	Class of 2026 Class of 2025
P3	RX515 and 517: Therapeutics and Case Studies 3 and 4	Class of 2025 Class of 2024
P3	RX502: Introduction to Experiential Education	Class of 2021-2025

IMPORTANT 200 CANVAS QUIZZES

RX413: CLASSES OF 2025 AND 2026			RX513: CLASSES OF 2024 AND 2025		
Mean Quiz Attempts	3.75	4.47	Mean Quiz Attempts	4.62	4.34
Mean Exam %	83.26	80.94	Mean Exam %	75.73	74.36

RX414: CLASSES OF 2025 AND 2026			RX517: CLASSES OF 2024 AND 2025		
Mean Quiz Attempts	3.37	4.05	Mean Quiz Attempts	1.74	1.62
Mean Exam %	86.65	84.51	Mean Exam %	86.02	85.92

RX502: PASS RATES

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Classes of '21-'23: 22.85          Classes of '21-'23: 22
Class of 2024: 24.44        Mean — Mode   Class of 2024: 25
Class of 2025: 24.9                 Class of 2025: 23

              RX 502: EXAM 1 SCORES

Classes of '21-'23: 10                      Classes of '21-'23: 29
Class of 2024: 15   Minimum Score — Maximum Score   Class of 2024: 30
Class of 2025: 14                           Class of 2025: 30
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NUMBER OF STUDENTS WHO PASSED RX 502 EXAM 1 ON THE FIRST ATTEMPT

CLASS OF 2021 78/101

CLASS OF 2022 95/130

CLASS OF 2023 78/102

CLASS OF 2024 81/98

CLASS OF 2025 69/78

- 77%
- 73%
- 76%
- 83%
- 88%

IS THERE ANY CORRELATION?

Correlation matrices between Canvas Quiz attempts and Exam Questions correct revealed that throughout all courses and cohorts there was no correlation between the number of attempts and improved exam scores.

Class of 2024

	RX513: Canvas quiz attempts	RX513: number of top 200 questions correct on exam 1 (n=10)	RX513: number of top 200 questions correct on exam 2 (n=8)	RX513: number of top 200 questions correct on exam 3 (n=7)	RX517: Canvas quiz attempts	RX517: number of top 200 questions correct on exam 2 (n=5)	RX517: number of top 200 questions correct on exam 3 (n=5)
RX513: Canvas quiz attempts	1						
RX513: number of top 200 questions correct on exam 1 (n=10)	0.210318985	1					
RX513: number of top 200 questions correct on exam 2 (n=8)	0.109974149	0.436841811	1				
RX513: number of top 200 questions correct on exam 3 (n=7)	0.273735912	0.348548404	0.526265391	1			
RX517: Canvas quiz attempts	0.384089086	0.045566673	0.0685381	0.186811638	1		
RX517: number of top 200 questions correct on exam 2 (n=5)	0.219171097	0.262794474	0.388333983	0.284342033	-0.03056817	1	
RX517: number of top 200 questions correct on exam 3 (n=5)	0.206855673	0.136501676	0.069399209	0.334040476	0.22808417	0.056398697	1

Class of 2025

	RX413: Canvas quiz attempts	RX413: number of top 200 questions correct on final (n=11)	RX414: Canvas quiz attempts	RX414: number of top 200 questions correct on final (n=10)	RX513: Canvas quiz attempts	RX513: number of top 200 questions correct on exam 1 (n =6)	RX513: number of top 200 questions correct on exam 2 (n=5)	RX513: number of top 200 questions correct on exam 3 (n=5)	RX517: Canvas quiz attempts	RX517: number of top 200 questions correct on exam 2 (n=5)	RX517: number of top 200 questions correct on exam 3 (n=5)
RX413: Canvas quiz attempts	1										
RX413: number of top 200 questions correct on final (n=11)	-0.149030368	1									
RX414: Canvas quiz attempts	0.007268309	0.038525121	1								
RX414: number of top 200 questions correct on final (n=10)	-0.111349652	-0.040418051	0.032207355	1							
RX513: Canvas quiz attempts	-0.082466444	0.058431763	0.065891238	0.107204878	1						
RX513: number of top 200 questions correct on exam 1 (n =6)	-0.176531283	-0.017507502	0.078485832	0.187453888	0.159007383	1					
RX513: number of top 200 questions correct on exam 2 (n=5)	-0.095116521	0.046214338	-0.005606472	0.237047971	0.17400786	0.313263147	1				
RX513: number of top 200 questions correct on exam 3 (n 5)	-0.178232046	-0.00599796	0.032393848	0.272623424	-0.062970203	0.258893788	0.088866836	1			
RX517: Canvas quiz attempts	-0.100694047	0.279754967	0.202024796	-0.009385689	0.121913423	-0.12978997	0.102659431	-0.027004381	1		
RX517: number of top 200 questions correct on exam 2 (n=5)	-0.132755861	-0.042061161	0.141961936	0.330816761	0.027418243	0.268827571	0.207106364	0.322464219	0.033947027	1	
RX517: number of top 200 questions correct on exam 3 (n=5)	-0.239847304	0.11252084	-0.003914399	0.518557398	0.054521744	0.179674645	0.058073958	0.214905166	0.115507471	0.314994771	1

Class of 2026

	RX413: Canvas quiz attempts	RX413: number of top 200 questions correct on final (n=10)	RX414: Canvas quiz attempts	RX414: number of top 200 questions correct on the final (n=12)
RX413: Canvas quiz attempts	1			
RX413: number of top 200 questions correct on final (n=10)	-0.147035095	1		
RX414: Canvas quiz attempts	0.003380514	-0.162026911	1	
RX414: number of top 200 questions correct on the final (n=12)	-0.104828215	0.358893278	0.134894412	1

CONCLUSIONS

Our findings show that the curriculum change has increased the number of students passing RX502 Exam 1 on the first attempt. However, there was no correlation between the number of Canvas quiz attempts used and the number of exam questions answered correctly. Based on these results, perhaps instead of unlimited attempts student should have a set number of attempts. From this preliminary data, we hypothesize that four to five attempts would be sufficient. There was also no significant difference in scores for subsequent RX502 exams. Potentially because students see the type of questions that will be asked and adjust their study habits accordingly. This pilot study has limited data points so further analysis will be conducted with future cohorts.