Precision Feedback: Developing Individualized Student Progress Reports

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Background

- The Practice Ready Curriculum (PRC) at Auburn University (AU), Harrison College of Pharmacy (HCOP) is designed for PharmD students to learn the knowledge, skills, attitudes, and experiences necessary to become "Practice-Ready" Pharmacists upon graduation.
- Providing students with precision feedback about their learning is essential for them to progress in their training to become Practice Ready Pharmacists.
- Learning progress is measured through the achievement of 12 competencies essential for pharmacy practice. These competencies include, for example, conduct medication history and perform necessary calculations.
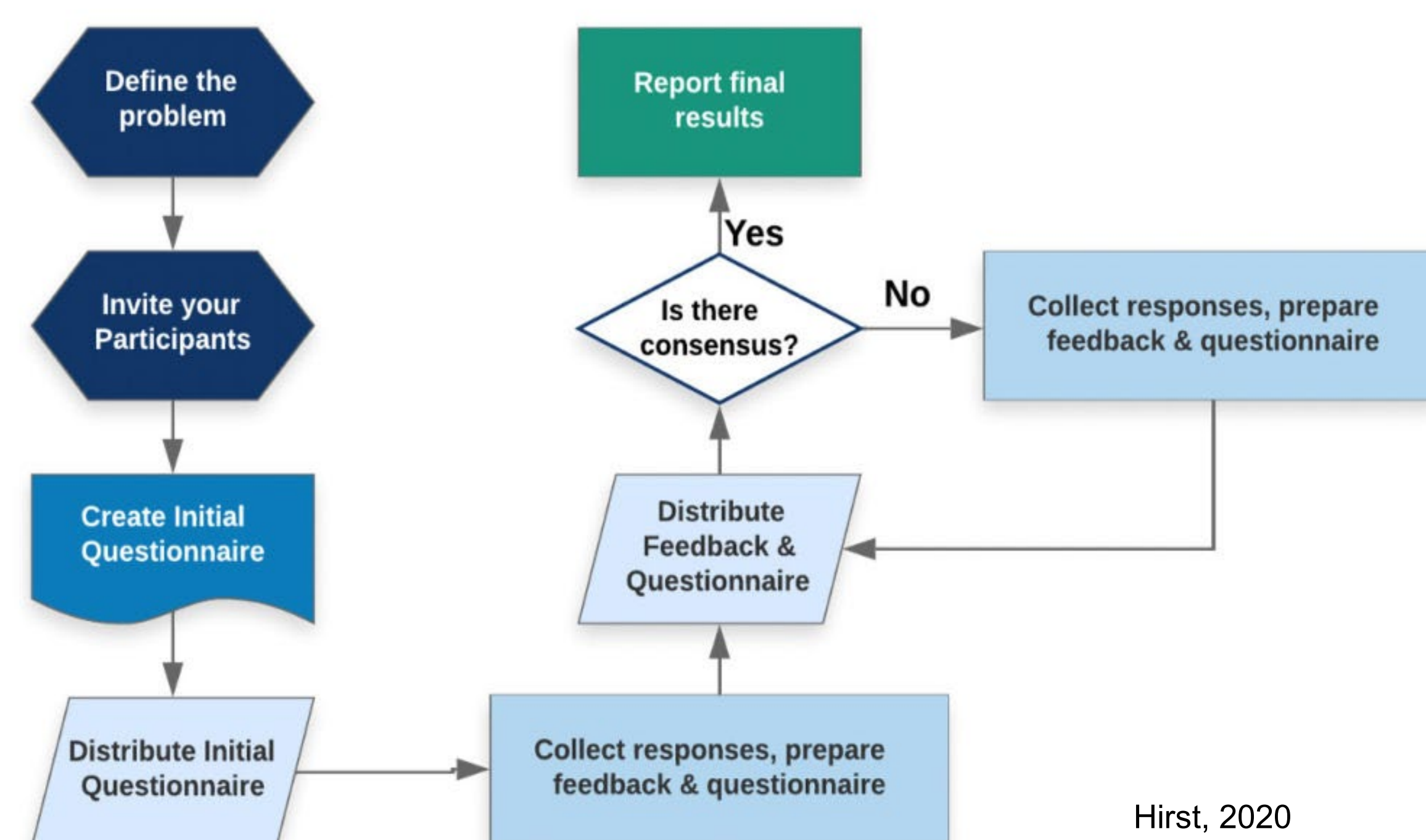
Objective

- Pilot a program to provide students with precision feedback about their learning.
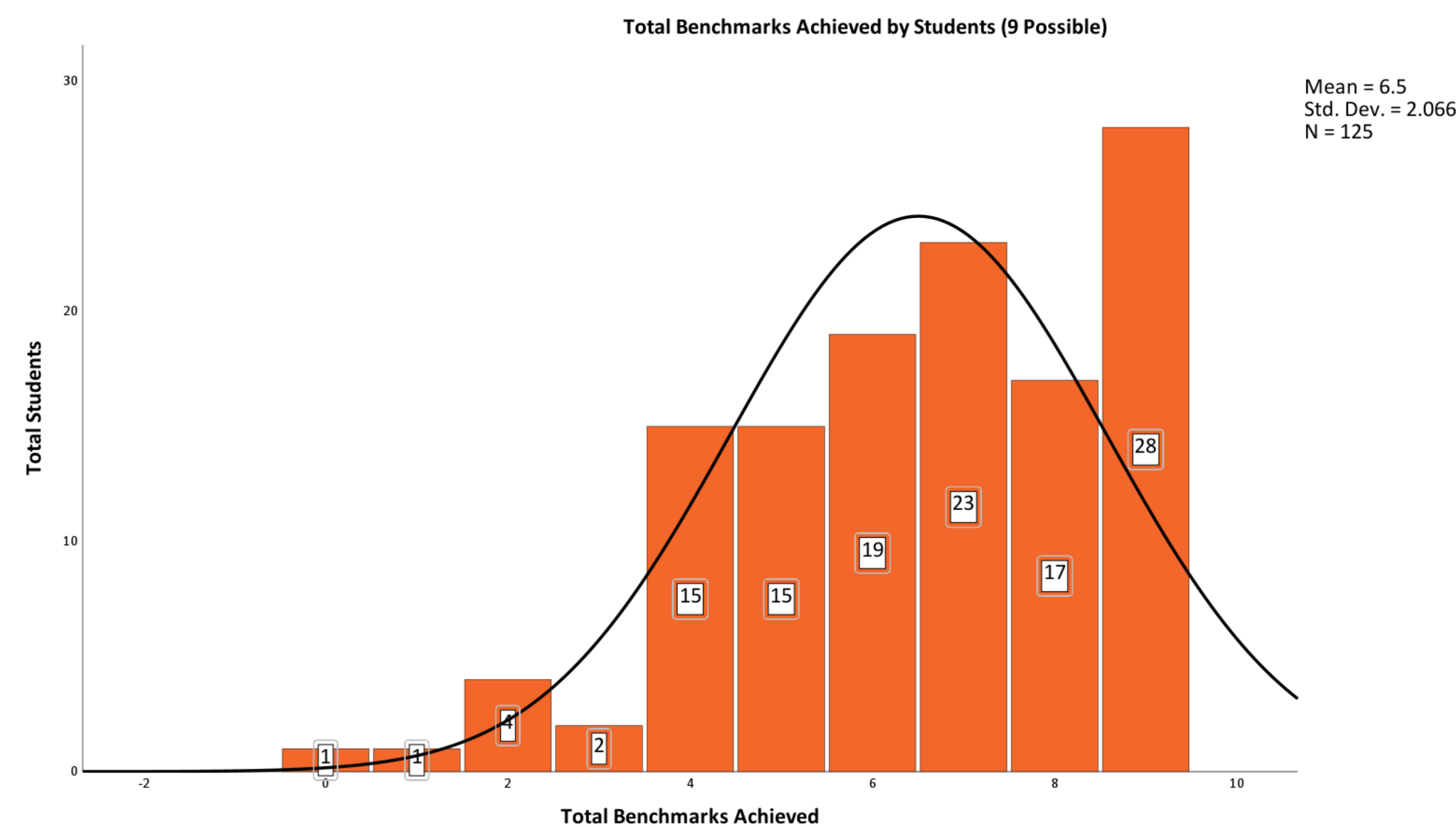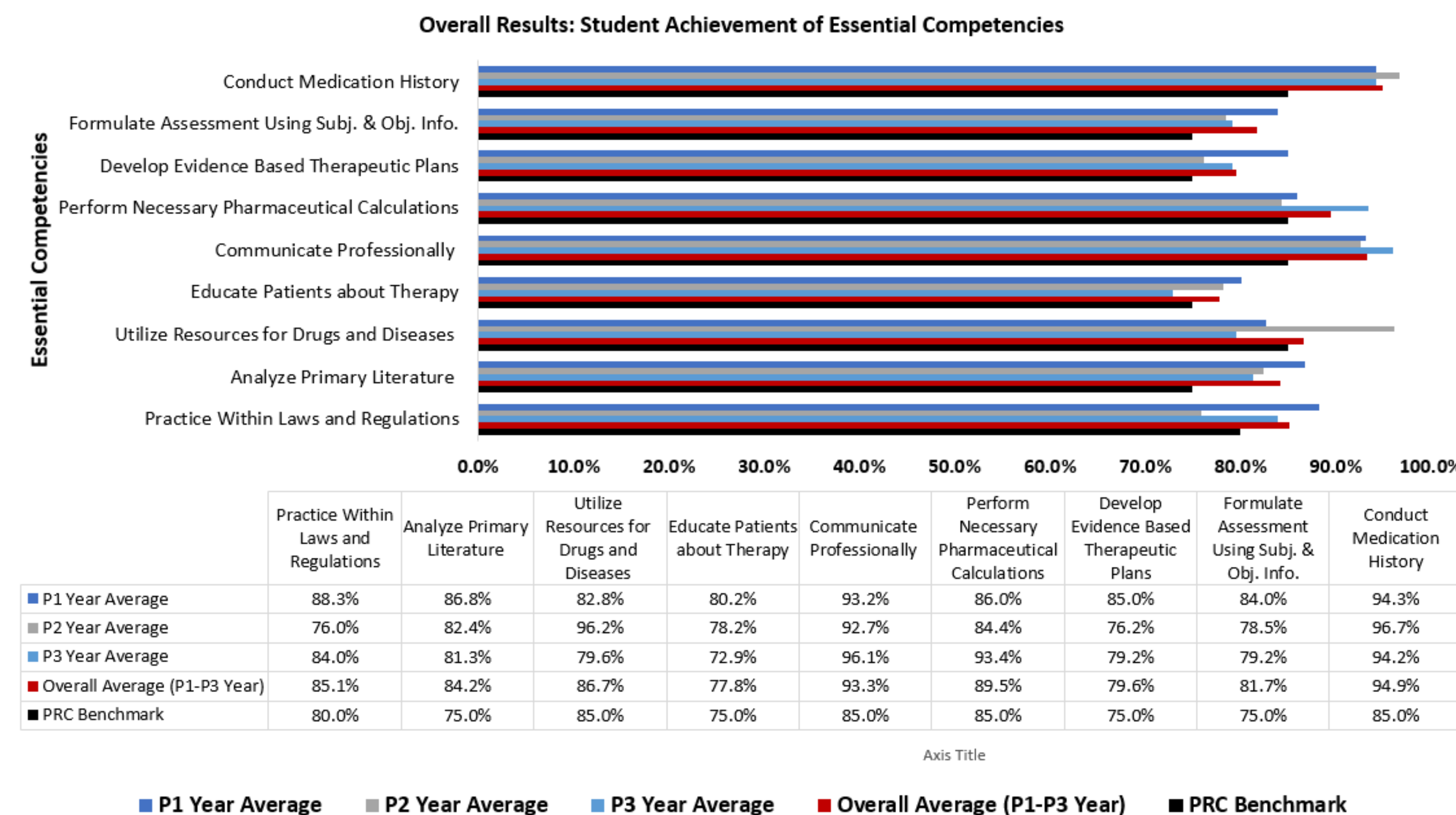
Method

- Identifying and ultimately measuring students' achievement of competencies essential for Advanced Pharmacy Practice Experiences (APPEs) was the primary goal. Measuring APPE readiness is also an accreditation requirement.
- The 12 essential competencies were identified by curricular leaders. Achievement threshold "benchmark" scores were set using the Delphi Method. This method led to a consensus while also preventing group think.
- An individualized progress report was generated for each student at the beginning and end of their P3 year. The reports were sent to 125 Class of 2024 students and showed their academic achievement in nine of the 12 competencies. Three areas did not have a full three years of data and were excluded from the progress reports.
- The individual achievement scores were calculated from the student's outcomes on exams, performance-based assessments, and assignments. To facilitate this process, competencies were "tagged" to specific questions using Exam Soft.

Delphi Model

Hirst, 2020

Results

Overall Results: Student Achievement of Essential Competencies

	Practice Within Laws and Regulations	Analyze Primary Literature	Utilize Resources for Drugs and Diseases	Educate Patients about Therapy	Communicate Professionally	Perform Necessary Pharmaceutical Calculations	Develop Evidence Based Therapeutic Plans	Formulate Assessment Using Subj. & Obj. Info.	Conduct Medication History
P1 Year Average	88.3%	86.8%	82.8%	80.2%	93.2%	86.0%	85.0%	84.0%	94.3%
P2 Year Average	76.0%	82.4%	96.2%	78.2%	92.7%	84.4%	76.2%	78.5%	96.7%
P3 Year Average	84.0%	81.3%	79.6%	72.9%	96.1%	93.4%	79.2%	79.2%	94.2%
Overall Average (P1-P3 Year)	85.1%	84.2%	86.7%	77.8%	93.3%	89.5%	79.6%	81.7%	94.9%
PRC Benchmark	80.0%	75.0%	85.0%	75.0%	85.0%	85.0%	75.0%	75.0%	85.0%

■ P1 Year Average ■ P2 Year Average ■ P3 Year Average ■ Overall Average (P1-P3 Year) ■ PRC Benchmark

Total Benchmarks Achieved by Students (9 Possible)

Mean = 6.5
Std. Dev. = 2.066
N = 125

Outcomes

- Conduct medication history (94.9%) had the highest overall achievement by students when averaged across the P1-P3 years.
- Communicate professionally (93.5%) and perform necessary calculations (89.5%) also had exceptionally high levels of achievement. Educate patients about therapy (77.8%) and develop evidence based therapeutic plans (79.6%) benchmarked but had the overall lowest level of student achievement.
- Twenty-eight students achieved all threshold scores while 17, 23, and 19 students didn't meet 1, 2, or 3 competencies, respectively. Fifteen students each met 4 or 5 competencies. Eight students met three or fewer more competencies.
- The formative progress report was explained to students in class at the beginning- and end of the P3 year. Students received their individualized progress report via email and were encouraged to use their results to adjust their preparation.

Discussion & Conclusion

- The pilot program successfully provided progress reports on student's achievement of competencies to demonstrate APPE-readiness.
- Students provided positive opinions regarding the report at feedback sessions and faculty can now monitor student progression longitudinally.
- In the future, reports providing yearly and cumulative outcomes will be disseminated after the first and second year and two months before APPEs begin.
- Students who do not benchmark will remediate before APPEs. Other PharmD programs can model this process to provide students with precision feedback.

Progress Report Example

AUBURN UNIVERSITY
Harrison College of Pharmacy

Class of 2024 Individualized Progress Report
Overall Academic Achievement (P1-P3 Year)

Your progress report is part of a program designed to provide individual students with precision feedback about their learning. The results do not affect your grades in any way. The results are intended to provide you with helpful feedback about areas in which you are doing well as well as areas in need of improvement. Please consider this information as you prepare for your Advanced Pharmacy Practice Experiences (APPEs) and your NAPLEX exam.

You are receiving feedback on competencies that the Practice Ready Curriculum (PRC) leadership team identified as being especially important for readiness to enter APPEs in your P4 year. Your aggregate scores are shown in the blue column in the table below. This column shows an overall percentage of how you did across various assignments, quizzes, exams, and Performance Bases Assessments (PBAs), across your P1 – P3 years. This information is available because questions in Exam Soft are digitally tagged to the competencies in your progress report. In other words, your competency scores are largely an average of all the questions that you answered in Exam Soft during the past three years. New items have been added to this year's report. Your performance on Top 300 questions is now included as well as your competency achievement within individual, standalone years (P1, P2, P3).

You will also notice that there is an additional column labeled – Achievement Goal for End of P3 Year. This is the level that your faculty would like students to achieve at the end of their P3 year. We encourage you to talk about this information with your Village mentor and other faculty with whom you may work. Finally, a list of assessments used to calculate your scores is included on the next page. If you have comments or questions, please do not hesitate to contact the HCOP Director of Quality Improvement, Dr. Daniel Trujillo (djt0030@auburn.edu).

Student:

PharmD Essential Competencies	Individual Year Achievement			Overall Achievement (Average of P1-P3 Year)	Achievement Goal for end of P3 Year
	P1	P2	P3		
Conduct medication history	90.9%	87.1%	96.2%	90.7%	85%
Formulate assessment using subj. & obj. information	82.2%	81.5%	78.0%	81.1%	75%
Develop evidence based therapeutic plans	89.3%	66.5%	73.6%	74.9%	75%
Perform necessary pharmaceutical calculations	82.4%	73.8%	92.3%	85.9%	85%
Communicate professionally	88.6%	96.9%	100.0%	94.2%	85%
Educate patients about therapy	85.0%	74.2%	74.0%	78.7%	75%
Utilize resources for drugs and diseases	81.8%	82.4%	81.8%	86.7%	85%
Analyze primary literature	85.6%	86.9%	60.6%	83.5%	70%
Practice within laws and regulation	83.4%	83.4%	90.2%	86.5%	80%
Top 300			91.9%	91.9%	N/A

References

- Baker, G. R., & Jankowski, N. A. (June 2020). Documenting learning: The comprehensive learner record. *National Institute for Learning Outcomes Assessment, 46.*
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- Jankowski, N. A. (February 2021). Evidence-based story telling in assessment. *National Institute for Learning Outcomes Assessment, 50.*
- Hirst, R. (2020). (Delphi) Method Man. In RCEM Learning: https://www.rcemlearning.co.uk/foamed/delphi-method-man/
- Please contact Dr. Lea Eiland (eilanls@auburn.edu) and Dr. Daniel Trujillo (djt0030@auburn.edu) with questions or if you would like to discuss the project.