

Impact of Repeated Top Drug Information Assessments in a Pharmacy Skills Lab Course

Laura Perry, PharmD, BCPS, Shantanu Rao, PhD
The University of Findlay, College of Pharmacy

INTRODUCTION

- The North American Pharmacist Licensure Examination (NAPLEX®) board examination assesses the ability of graduates to identify drug characteristics including, the brand/generic name and therapeutic drug class.
- Accordingly, the Accreditation Council for Pharmacy Education (ACPE) standards 2016 and the guidance document to standards 2016 underscore the development of foundational drug knowledge during the Pharm.D. curriculum.
- Valdez and colleagues observed that students perceived a high confidence about their clinical skills despite a sharp decline in their performance on a knowledge assessment test.
- Closely spaced quizzes on brand and generic drug names has been reported to improve long-term retention of drug information and a repeated testing strategy is perceived by students to strongly improve their long-term knowledge.
- The University of Findlay does not have a stand-alone top drug course and assessment of top drug knowledge was not consistently evaluated across therapeutic disease state module courses.
- We hypothesized that pharmacy skills lab courses offer an opportunity to assess top drug knowledge from all concurrent therapeutic disease state module courses to improve student retention.

OBJECTIVES

- To explore the impact of repeated top drug assessments in a pharmacy skills lab on student knowledge regarding top drug information
- To determine student perspectives concerning the implementation and academic impact of weekly top drug assessments.

METHODS

Participants

- Second professional year pharmacy students enrolled in a pharmacy skills lab course in the 2022 fall semester.

Interventions

- Weekly top drug quizzes and a cumulative final top drug exam.
- Top drug list included brand, generic, and therapeutic class and aligned with concurrent therapeutic disease state module courses.
- A survey was administered at the beginning and end of the semester to assess student perspectives.

Data Analysis

- Impact on student knowledge was determined by correlating mean top drug quiz scores to mean scores on all midterms and final exam of each module course using the Spearman rank correlation analysis.
- Differences in student perspectives were analyzed using the Wilcoxon sign ranked test. Thematic analysis was utilized for open response questions.

RESULTS

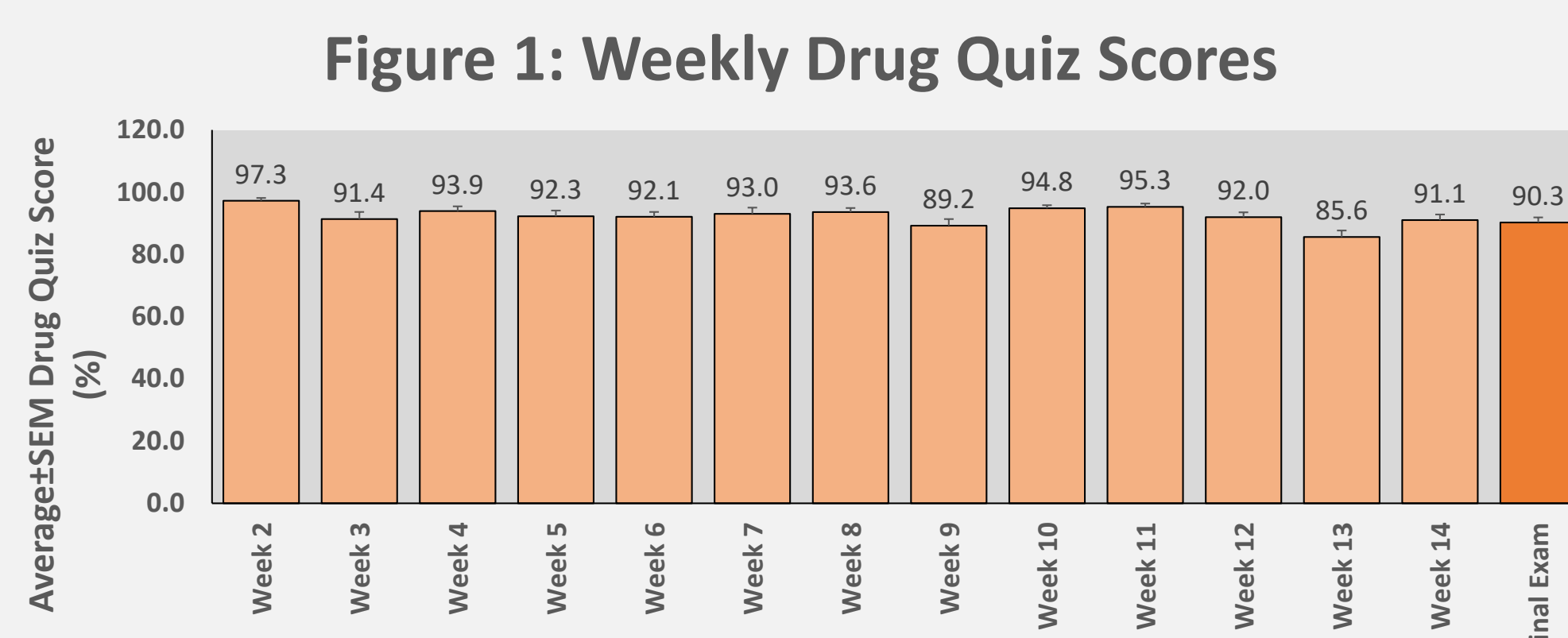


Figure 1: Mean± student score on weekly drug quizzes and final top drug exam.

Second-Professional year Courses	Cardiovascular	Renal	Respiratory
Spearman's rho	0.825	0.723	0.823
p-value	<0.001	<0.001	<0.001
n	44	44	44

Table 1: Spearman rank correlation analysis between average drug quiz score in the pharmacy skills lab and performance on respective therapeutic module courses.

RESULTS

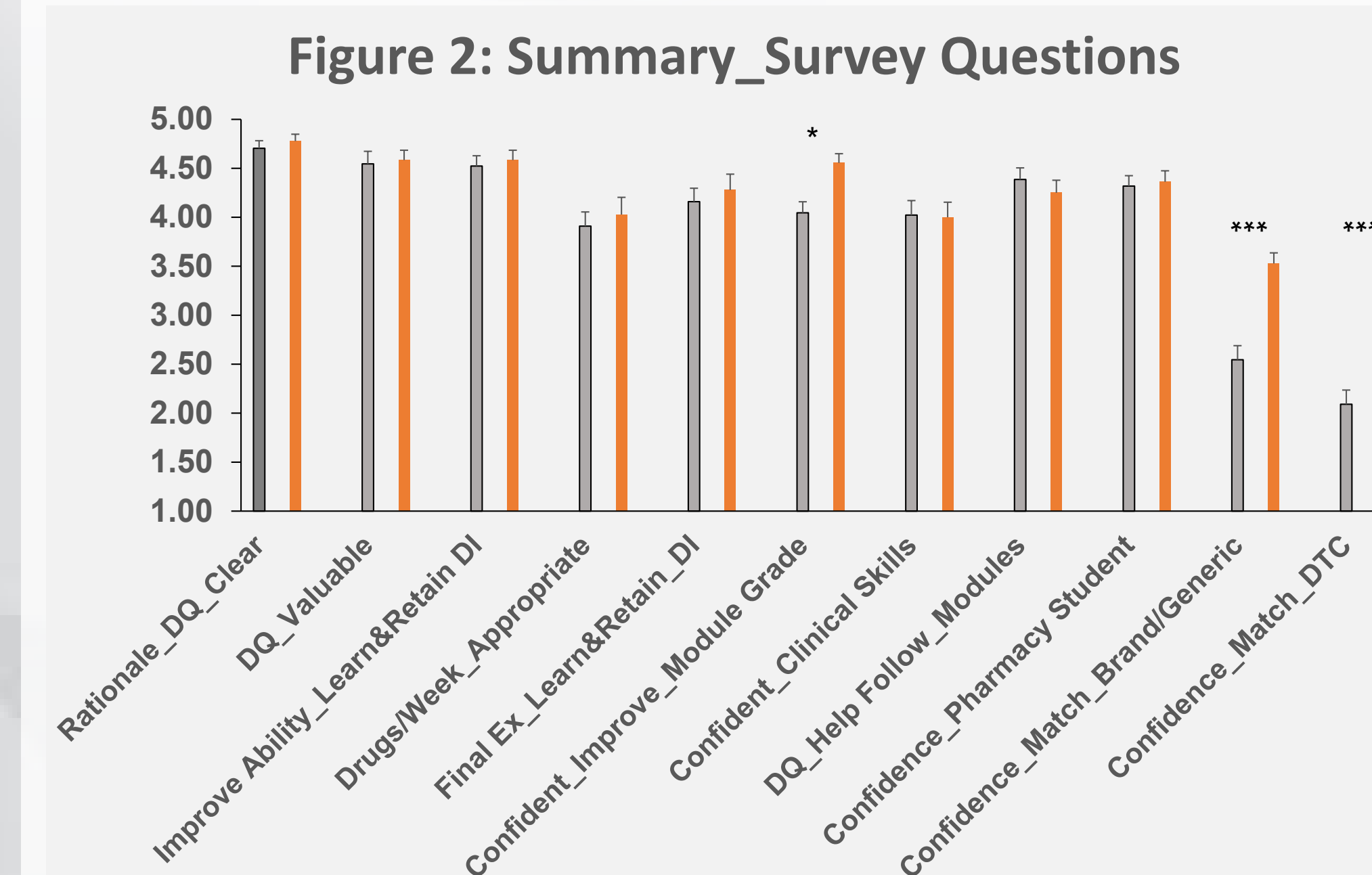


Figure 2: Survey questions were based on a 5-point Likert scale. Confidence in matching brand/generic and drug therapeutic class (DTC) were based on a 4-point Likert scale; *p<0.03; ***p<0.001

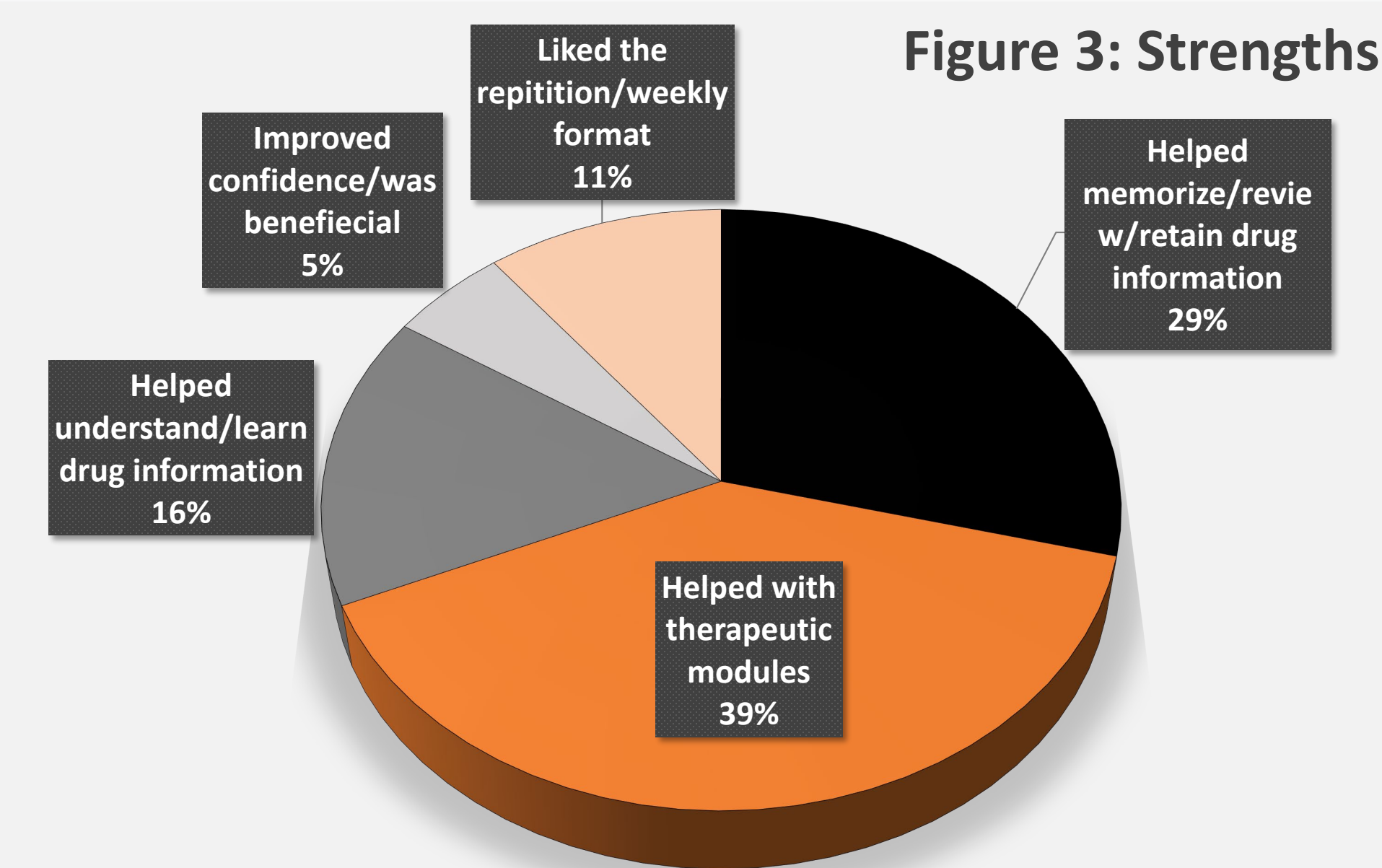


Figure 3: Thematic analysis of strengths provided by students within the survey comments at the end of the semester.

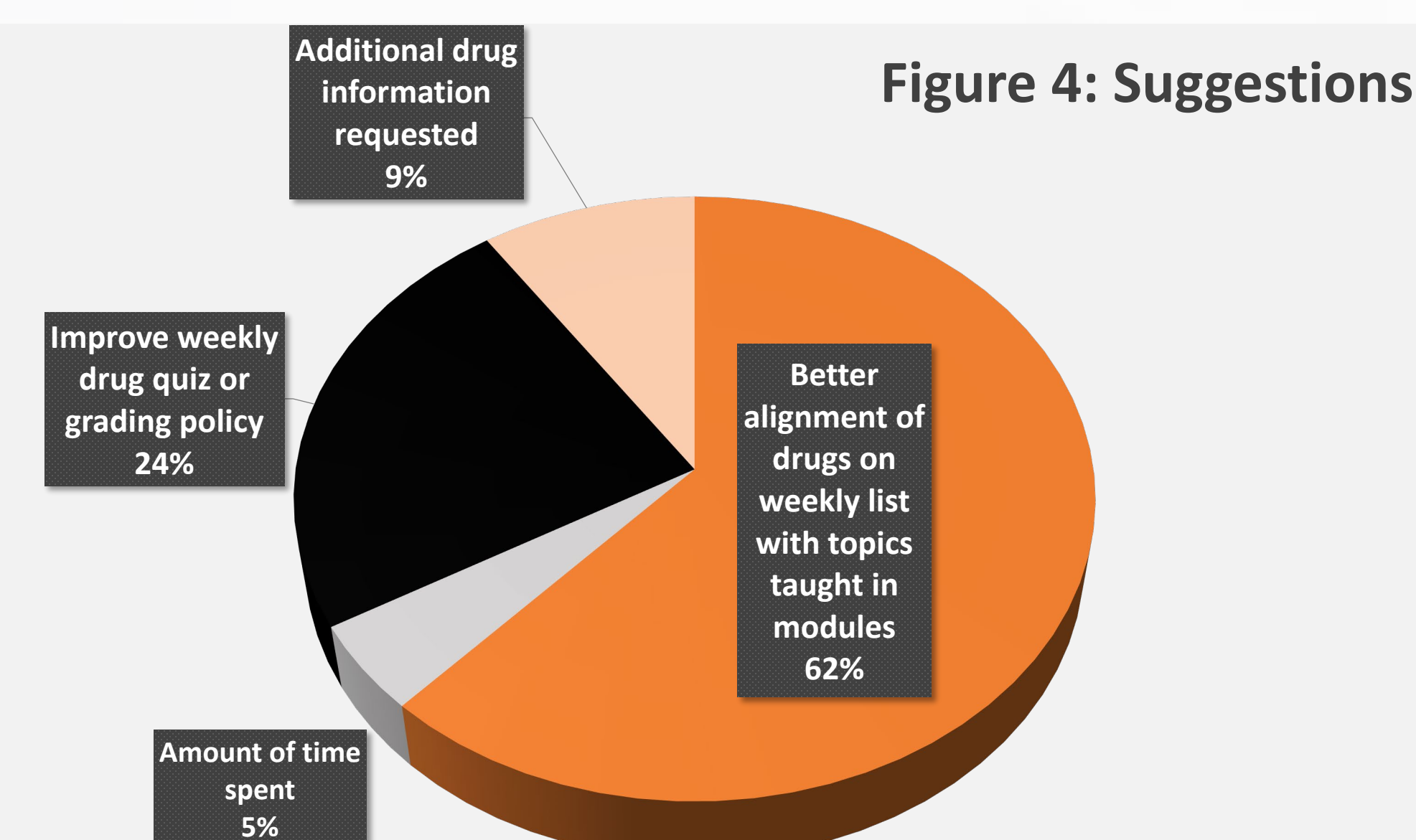


Figure 4: Thematic analysis of suggestions provided by students within the survey comments at the end of the semester.

DISCUSSION

- Drug quiz and exam scores were high throughout the semester with an average score of 85% or higher.
- A positive correlation was found between the average drug quiz score and performance in all therapeutic modules.
- Pre-post semester student surveys indicate a significant change in confidence that top drug quizzes would improve module grades and a significant change in confidence with matching brand/generic drug names and drug names to therapeutic drug class.
- The positive correlation with therapeutic module performance aligns with the significant change in student confidence that the top drug quizzes would improve module grades.
- Student perception comments also align with the positive correlation with therapeutic module grades.
- Very few students perceived weekly top drug quizzes as burdensome but many suggested improved alignment of drug quizzes with topics taught in the modules.

CONCLUSIONS

- Student performance on weekly top drug quizzes demonstrated a positive correlation with student scores on major assessments of all concurrent therapeutic module courses and student feedback was positive.
- Future plans include implementation and evaluation of weekly top drug quizzes to the entire lab course series.

REFERENCES

- Pharmacy NABP. NAPLEX Competency Statements. Accessed June 1, 2023. <https://nabp.pharmacy/programs/examinations/naplex/competency-statements-2021/>
- EDUCATION ACP. ACCREDITATION STANDARDS AND KEY ELEMENTS FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE. Chicago, Illinois 2015.
- EDUCATION ACP. GUIDANCE FOR THE ACCREDITATION STANDARDS AND KEY ELEMENTS FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE. Chicago, Illinois 2015.
- Valdez CA, Thompson D, Ulrich H, Bi H, Paulsen S. A comparison of pharmacy students' confidence and test performance. *Am J Pharm Educ.* Aug 15 2006;70(4):76. doi:10.5688/aj700476.
- Terenyi J, Anksorus H, Persky AM. Optimizing the Spacing of Retrieval Practice to Improve Pharmacy Students' Learning of Drug Names. *Am J Pharm Educ.* Aug 2019;83(6):7029. doi:10.5688/ajpe7029
- Coker AO, Lusk KA, Maize DF, et al. The effect of repeated testing of pharmacy calculations and drug knowledge to improve knowledge retention in pharmacy students. *Curr Pharm Teach Learn.* Dec 2018;10(12):1609-1615. doi:10.1016/j.cptl.2018.08.019