



Impact of a Non-Credit Pharmacy Readiness Course on Students' Academic Performance

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Introduction

- Students arrive at colleges of pharmacy with varying levels of academic preparedness for a rigorous pharmacy curriculum, and it is important to identify students who may struggle early in their first year and provide interventions that support their learning throughout the program.
- A bridging course was developed to assist students with the transition from undergraduate studies to graduate-level pharmacy education.

Objectives

The objectives of this study were to:

- Evaluate the short-term effectiveness of an online 10-module bridging course on academic performance.
- Identify struggling students early in the academic term to provide supportive interventions.

Methods

Bridging Course Content

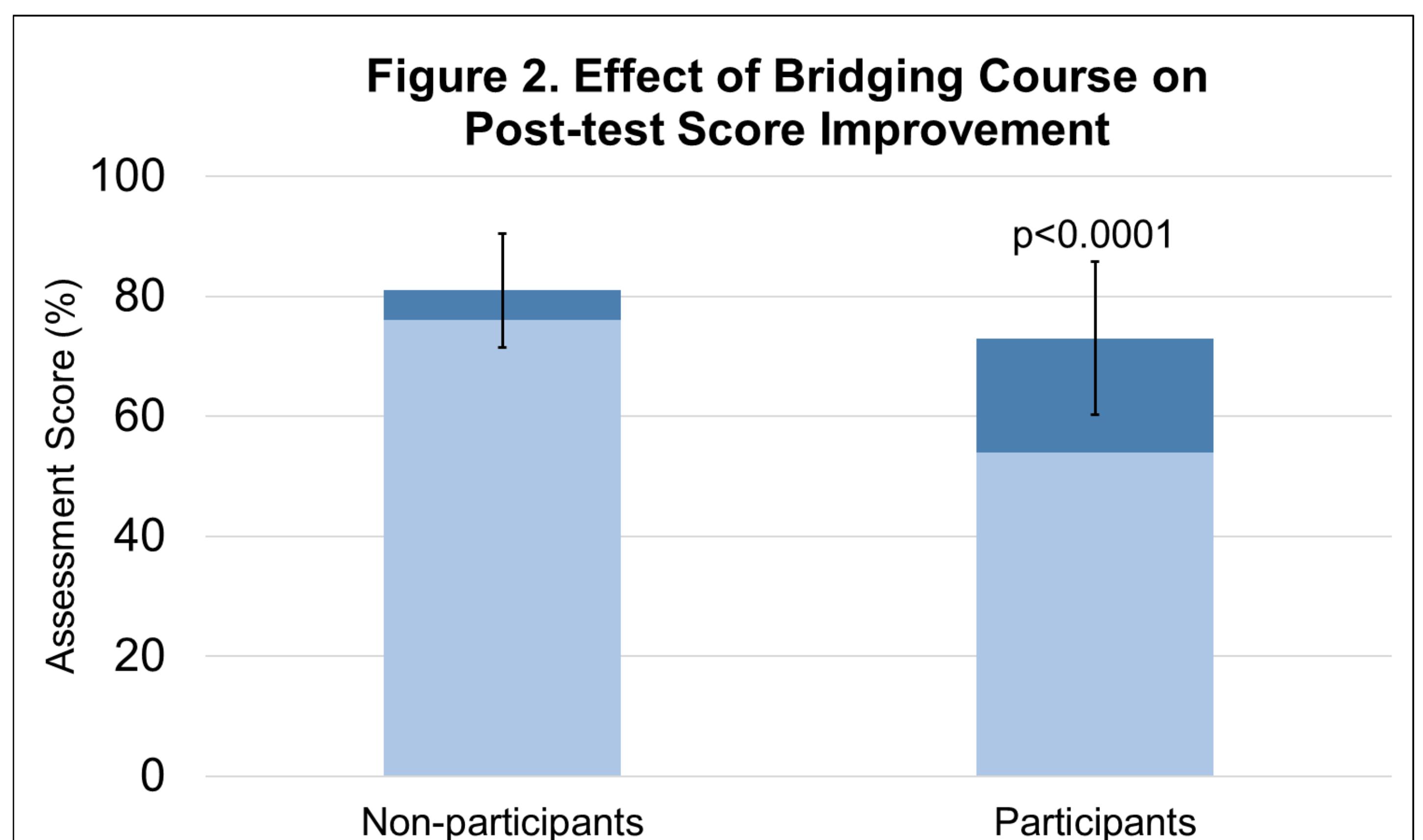
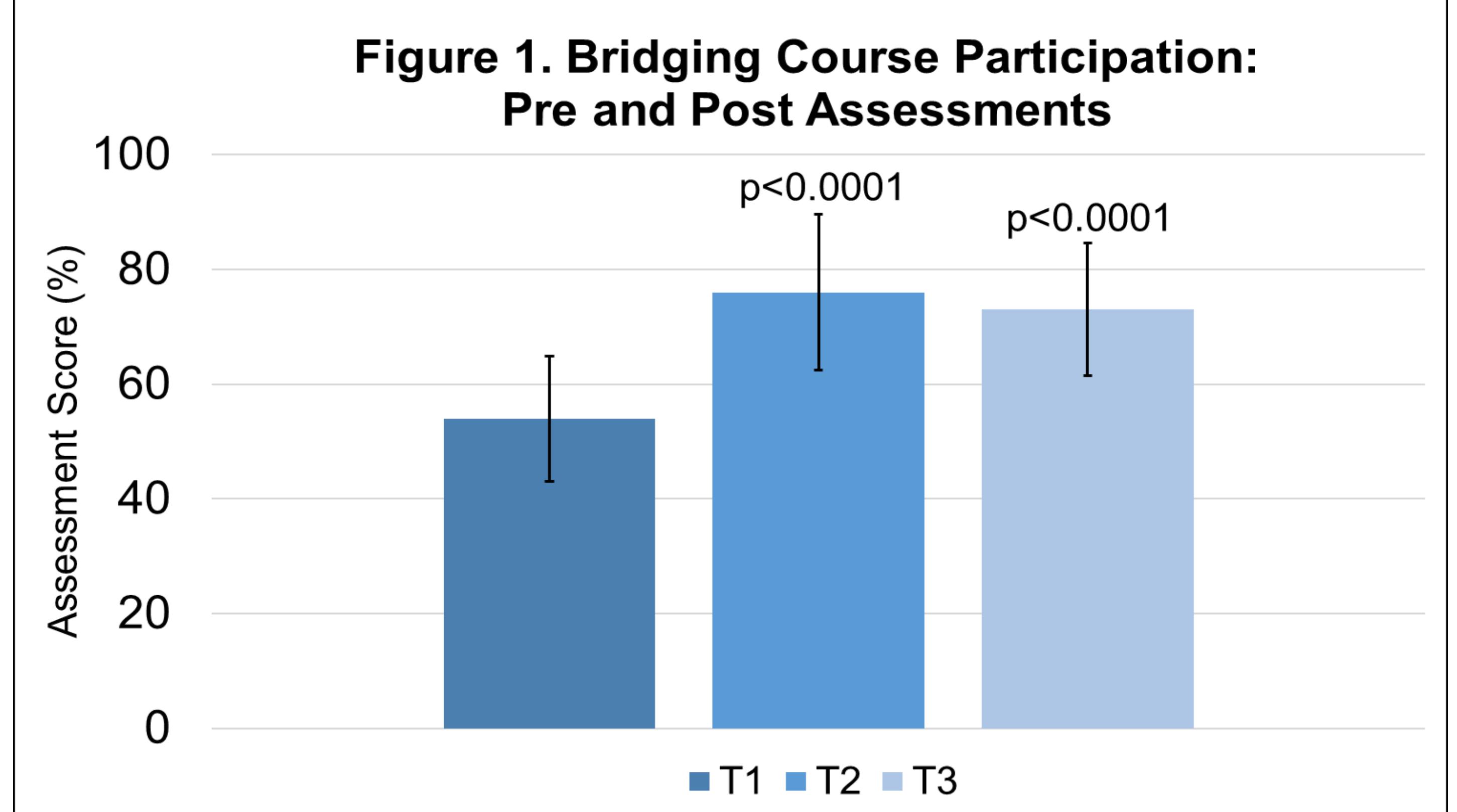
- The college developed a 10-module curriculum focusing on physiology, biochemistry, math, and medical terminology. These modules are online and self-guided and consist of slides with accompanying audio and formative quizzes to be attempted at the completion of each module. All modules were designed and/or approved by members of the appropriate department according to content.

Assessments and Survey

- A 30-question assessment was administered to all first year pharmacy students as part of their orientation activity (T1). Students who passed the assessment at 70% or higher, were exempted from completing the bridging course modules. The investigators hypothesized that passing the assessment indicates a sufficient level of academic preparedness.
- Students who failed the T1 assessment (<70%) were required to complete all 10 of the bridging course modules within 2 weeks. At the conclusion of this period of time, the group of students who completed the modules were given the same assessment a second time (T2). Feedback was provided to the individual students regarding the results and suggestions for further study to prepare them for success.
- At the beginning of the following quarter, all first-year students were given the assessment a third time (T3) to evaluate retention and academic progress over the course of their first quarter. At this time, an anonymous survey was administered to ascertain students' perceptions about the content, quality and helpfulness of the modules.

Statistical Analysis

- Descriptive statistics were used to show the data's central tendency and dispersion. Repeated measures ANOVA or paired t-tests, as appropriate, were used to examine differences in learning assessment scores between students who completed the modules and those who did not. Student perceptions regarding the modules were summarized descriptively. Alpha had been set a prior at 0.05.
- A total of 180 (100%), 138 (77%) and 166 (92%) students completed the T1, T2 and T3 assessments, respectively. Student who participated in the modules significantly improved assessment scores from T1 to T2 (54% vs. 76%, p<0.0001) (Figure 1). Students who scored <70% at T2 were contacted for follow-up intervention. All students demonstrated a significant improvement in assessment scores between T1 and T3; however, Pharmacy Readiness participants showed a greater proportional increase in their T3 scores (T1 53% vs. T3 73%, p<0.0001) over non-participants (T1 76% vs. T3 81%, p=0.004) (Figure 2).



Results

- 164 students completed the survey (91% response rate). Overall, students reported that: (1) the bridging course modules enhanced their ability to understand the concepts to a moderate extent, (2) the amount of time allocated for each module was just right, and (3) there were just the right number of modules.
- The majority of students felt that the concepts were covered in sufficient depth (83%), the modules provided information that helped them in their courses (73%), and the activities included in the modules helped reinforce the concepts (75%) (Table 1).

Table 1. Student Perceptions of Bridge Course Modules (N=164)

Module	The concepts were covered in sufficient depth. (% agree or strongly agree)	This module provided information that helped me in my courses. (% agree or strongly agree)	The activities included in the modules helped reinforce the concepts. (% agree or strongly agree)
Medical Terminology	82	69	70
Physiology: Homeostasis and Membrane Transport	85	75	76
Physiology: Autonomic Nervous System	82	76	77
Physiology: Pressure and Flow	81	73	75
Biochemistry: Introduction to Metabolism	78	69	71
Biochemistry: Cell Signaling	80	68	71
Biochemistry: Cell Cycle	80	69	74
Pharmacy: Basic Math	88	81	82
Pharmacy: Basic Chemistry Concepts	89	78	82
Pharmacy: Introduction to Dosage Forms	80	73	71
Overall	83	73	75

Conclusions, Limitations, and Future Directions

- The bridging course proved successful as a system of early identification and intervention for students who needed additional academic support. Students felt the bridging course modules were informative and helped them in their courses.
- Some students expressed anxiety and stress over completing the modules. In the future, the bridging course could be made available earlier, prior to the start of their first quarter.
- Limitations of this study include: survey and assessment of only one cohort and the inability to determine if students watched the video modules in their entirety. Additionally, the time period between completing the bridging course modules and post-study survey was 12 weeks; students may have forgotten or misrepresented their perceptions of the modules.

Disclosures

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation – All authors: no relevant disclosures.