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Research Paper

Faculty perception of team-based learning over multiple semesters

Clark D. Kebodeaux^{a,*}, Golden L. Peters^b, Paul M. Stranges^c, Jamie L. Woodyard^d, Scott Martin Vouri^e^a Pharmacy Practice and Science, UK College of Pharmacy, Bio Pharm Complex 247, 789 South Limestone, Lexington, KY 40536-0596, United States^b St. Louis College of Pharmacy, 4588 Parkview Place, St. Louis, MO 63110, United States^c University of Illinois at Chicago College of Pharmacy, 833 S Wood St, Chicago, IL 60612, United States^d Purdue University College of Pharmacy, 575 Stadium Mall Drive, RHPH G35, West Lafayette, IN 47907, United States^e Department of Pharmacy Practice, St. Louis College of Pharmacy, 4588 Parkview Place, St. Louis, MO 63110, United States

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ABSTRACT

Introduction: Perspectives from faculty regarding team-based learning (TBL) are not well understood. Previous studies describe faculty preference for TBL due to increased student interaction despite requiring increased time for design. The perception of changes in faculty workload over multiple semesters has not been measured. This research evaluates faculty workload and perceived student engagement after implementing TBL in a required non-prescription medication course over multiple semesters.

Methods: TBL was implemented in the non-prescription medication course and continued for three consecutive semesters. Faculty members' perception of TBL was captured using an anonymous survey. The survey was an 11 item questionnaire with five Likert-type response options to identify changes in workload, training, and student interaction using TBL.

Results: Twenty-eight total responses were collected from 10 faculty members who taught in at least one of the four semesters. Results were aggregated based on the number of semesters faculty continually taught in the course. More respondents agreed than disagreed that participation from and interactions with students increased with the TBL course compared to traditional lectures. However, more respondents believed the TBL course approach was more difficult and reported increased workload in the initial semester taught. Enjoyment of teaching increased for a majority of respondents.

Discussion and conclusions: This is the first study to explore the impact of TBL implementation over multiple semesters. These data can be used to help implement TBL in pharmacy school curricula.

Introduction

Team-based learning (TBL) is an instructional method of teaching that requires small group interaction to facilitate student learning.^{1,2} Four essential elements are required to implement TBL: groups, accountability, feedback, and assignment design.¹ The goal of TBL is to replace traditional didactic methodologies of lecture to transform the classroom experience from instructor teaching to student learning. This transformation can enable students to be more active in the learning process.²

Abbreviations: TBL, Team-based learning

* Corresponding author.

E-mail addresses: Clark.Kebodeaux@uky.edu (C.D. Kebodeaux), golden.peters@stlcp.edu (G.L. Peters), pmstrang@uic.edu (P.M. Stranges), woodyard@purdue.edu (J.L. Woodyard), scott.vouri@stlcp.edu (S.M. Vouri).

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TBL has been implemented in a variety of higher education settings and has expanded to many health professions.³ In particular, there has been an increased uptake of TBL in pharmacy education.⁴⁻⁶ As a result, many researchers and academicians have evaluated its impact on students' perceptions and learning outcomes with significant improvements in student performance and confidence.⁷⁻¹¹ While much of the research focuses on students, data on longitudinal perception from faculty are limited.

Previous literature suggested faculty satisfaction improved following TBL implementation with no effect on overall student grades.¹² In addition, previous research described increased faculty workload during the first year of TBL implementation.^{4,12-14} In a national survey of pharmacy faculty in United States (US) colleges and schools of pharmacy, implementing TBL required greater preparation time than traditional lectures.⁴ Also, faculty indicated a greater effort for instructors to facilitate TBL activities compared to traditional lecture.^{13,14} A recent study revealed thematic analysis on faculty perception about implementation of TBL; workload was noted as one of the challenges.¹⁵ No data that quantifies faculty workload, engagement/satisfaction of teaching, and implementation of TBL over a longitudinal period of time exists.

Rationale and objectives

Workload impact and design time for subsequent use of TBL in the same course over multiple semesters has not been measured. This research aims to evaluate faculty workload and perceived student engagement after implementing TBL in a required non-prescription medication course over four consecutive semesters.

Methods

Implementation

At St. Louis College of Pharmacy, TBL was implemented in PP2120: Introduction to Pharmaceutical Care: Nonprescription Products and Drug Information in 2012. The course was designed using accepted TBL methodology.^{1,2} PP2120 was a required stand-alone self-care, three credit hour course divided into two, two-hour course periods during a standard week. The course was taught to first year professional transfer students and students in their final semester of the pre-professional curriculum, prior to matriculating into the professional program. Given the experience of the students, the course began with two weeks of introductory patient-centered care and drug information topics that provided students with the necessary background and experience to complete required TBL sessions.

The course was then divided into 10 self-care therapeutic topics for which over-the-counter therapy was available. TBL was used to facilitate student learning in each of the 10 distinct topics. The use of TBL continued in these specific topics for each subsequent semester.

Students were required to complete two hours of pre-class content weekly including lecture-based videos and required readings. During the first lecture period, students completed a 20 question individual readiness assurance test (iRAT) online followed by the same quiz taken in assigned groups, or teams, as the team readiness assurance test (tRAT). Students were allowed to appeal questions as a team using student-supplied evidence after completion of the initial assessment. The remaining time in the first lecture period was dedicated to student-generated "muddiest points"—areas that lacked clarity and time for the instructor to provide any clinical pearls that may help the student comprehend the material at a higher level. Muddiest points submitted by students could not be related to a specific question from the iRAT/tRAT, but could be regarding a general concept.

The students were expected to complete an assigned 17-question case in their assigned groups as their application exercise in the second session. Students had 50 min to complete the case that was then submitted online. Next, faculty led a discussion of the case materials that included the simultaneous response of correct answers, thus providing students with immediate feedback on their performance. Each semester consisted of two exams and a comprehensive final exam. This design was purposeful and consistent with accepted methodology for the standard model of TBL implementation.²

Assessment of faculty perception

Data collection was based on a survey tool used to evaluate faculty perception on workload, engagement/satisfaction of teaching, and implementation of TBL over a longitudinal period of time.¹⁶ This same 11 item questionnaire with five Likert-style response options was administered for four consecutive semesters to non-resident faculty in PP2120 via SurveyMonkey® (SurveyMonkey; San Mateo, CA). Identifiable data points were not collected from faculty in order to maintain anonymity. Data collection and research was classified as exempt by the St. Louis College of Pharmacy Institutional Review Board.

Subsequent semesters included pharmacy residents as instructors but were not included in the survey due to the inability to participate in all semesters. Additional faculty were later involved in the course due to faculty turnover or changes in faculty teaching responsibilities. New faculty members to the course completed the survey even if he/she did not participate in the initial semester of TBL in this course. In total, faculty could have been surveyed up to four times if teaching in all consecutive semesters in the study period.

Analysis

Likert scales were transformed into three variables: 1) increased/agree, 2) did not change/no preferences, or 3) decreased/

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