Problem Based Learning (PBL) in Medical Education: What is PBL, how and why does it work?

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Summary

PBL is a case/problem-driven, active learning program where knowledge, skills, team-work and professionalism are instilled in our students to become skilled in osteopathic medical care very early in their training. This is accomplished through: (1) discovery and learning the breadth/depth of fundamental sciences and foundations of health and diseases; (2) small-group interaction; (3) picking their own test topics, and (4) using PBL exams, standardized (National Board of Medical Examiners Comprehensive Basic Science Examination (NBME)) and other diagnostic exams to measure outcomes.

Our PBL program has undergone increased oversight and innovative changes to the original adoption of the Ohio State University model. Assessment of competencies and outcome-based measures have resulted in the following changes in how we prepare and deliver PBL: (1) resilience in higher standard of facilitation by mentoring the facilitators; (2) required textbooks as resources for students; (3) board-style exams; (4) intranet delivery of PBL cases to free up time for discussion of the biomedical sciences; and (5) synchronization of our clinical skills and OPP/OMM courses for better integration of basic and clinical sciences in fulfilling LECOM’s mission and goals for medical education.

Methods

Retrospective analysis of class data from 2008-2017 is presented. For each class, we examined fourth semester PBL examination, NBME Comprehensive Basic shelf exam, and COMLEX Level I scores. Class averages for each examination with associated trend lines are shown.

Results

PBL Final Semester Scores

Results

COMLEX Level 1 Scores

COMLEX Level 1 Scores

NBME Comprehensive Basic Science Exam Scores

Conclusions

1) PBL written exam scores and outcomes have been steady since class of 2011, despite increasing complexity of in-house examinations. These block exams include an increase in the number of board style questions, and an increase in questions requiring second-order thinking and application. Students demonstrate resilience by working harder in response to improved facilitation and structure, leading to better outcomes.

2) NBME outcomes indicate a moderate upward trend associated with improvement of scores. A requirement of standard textbooks, enhanced facilitation in PBL and increased faculty efforts in item writing have contributed to this trend.

3) COMLEX Level I scores indicate a trend similar to that seen in the NBME outcome measures. The factors mentioned in 2 above, along with the use of in-house diagnostic examinations during years 1 and 2 have contributed to this success.

References


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