Redesigning a standard medical student learning experience

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RATIONALE/NEED

The third-year medical students at East Carolina University have awarded the Department of Surgery with the best clerkship honor frequently. This occurred even though best teaching/learning practices are not utilized. These accolades may be because a surgical clerkship is, by nature, an active learning environment leading to an increase in learner satisfaction. Active learning occurs on rounds, in the operating room, and in the clinic. This is often accompanied additional active learning via classic Socratic teaching often employed by surgeons. This allows for student-centered learning in contexts all practicing physician encounter. In addition, the flexibility of the experience allows students to define personal goal for the clerkship.

Accompanying this active, learner-centered experience is a series of archaic PowerPoint driven didactic lectures. This format has likely evolved little and there is no incorporation of active-learning techniques such as case studies, problem-based learning, team-based learning or flipped classroom

METHODS/DESCRIPTION

To utilize optimal teaching techniques active-learning was incorporated into a surgical clerkship learning experience focused on surgical management of the pancreas diseases. A current hour long teacher-centered didactic lecture was re-design this into a learner-centered active experience employing several active learning techniques. The lecture will be divided into four smaller segments: pancreatic anatomy and physiology; pancreatitis; pancreatic cancer; and other neoplasms of the pancreas. Breaking up the lecture was designed to re-engage learners and overcome decreases in learning that occurs after the first 10 minutes.

I will employ a hybrid of just-in-time and team-based learning. Each 15 minute segment will presented in a standard PowerPoint format. Care will be taken to include concepts commonly found on the student shelf examination to ensure relevance. In order to ensure mastery of subject matter, I will present several multiple choice questions derived from student study guides after each segment. Using a clicker application for smart phones the questions will be answered individually and then in teams. I will provide content expertise to rectify misperceptions.

In order to improve contextual learning, after conclusion of the four sub segments, I will engage the students in a case-based, problem-based learning experience with standardized patients that highlight key intellectual concepts. Questions will be directed to each student, going around the room in a clockwise manner to ensure engagement of all learners.

RESULTS

YOUR FEEDBACK HELPS ASSURE QUALITY TEACHING. PLEASE TAKE TIME TO PROVIDE YOUR ASSESSMENT AND RETURN. THANK YOU.

PLEASE EVALUATE THE EDUCATIONAL QUALITY OF THIS PRESENTATION:

	Poor ←			→ Good ←			→ Excellent		
Clear statement of objectives:	1	2	3	4	5	6	7(1)	8(1)	9(11)
Clarity of presentation:	1	2	3	4	5	6	7	8(3)	9(10)
Organization of presentation:	1	2	3	4	5	6	7(1)	8(2)	9(10)
Coverage of subject:	1	2	3	4	5	6	7	8(1)	9(12)
Clinical usefulness of topic:	1	2	3	4	5	6	7	8	9(13)
Opportunity for questions:	1	2	3	4	5	6	7	8	9(13)
Overall impression:	1	2	3	4	5	6	7	8(3)	9(10)

COMMENTS FOR PRESENTERS:
What was *most* beneficial?
"Good questions a lot of very clinically relevant information"
"The questions and cases were very helpful. I appreciate that you made the question relevant to our shelf"
"Good incorporation of cases, questions, imaging (radiological) and anatomic figures with concepts written out"
"Practice questions, interactive, emphasizing key concepts. Break between two parts of lecture"
"Case questions"
"The pimping/questions. I felt like I retained more. It was also focused on our upcoming exam which is helpful"
"Questions after explanations of conditions helps keep us paying attention. Stressing important facts. Answering all questions"
"Questions. Explanations. Short sections. Break"
"Questions helpful"
"Interactive, board style questions, mini lecture"
"Enjoyed the lecture part because it gave us a primer for the questions. Most of the questions were good. Liked his passion for teaching and the effort he obviously put into this lecture. I feel prepared for the shelf (pancreas portion). Very long but thorough"

The new "lecture" has been used twice to date. Overall, the evaluations have been lower than in the past. Comments as to what was least beneficial include "It would have been good to know how PowerPoint worked that way we don't waist 20 minutes trying to get up. And we don't need an additional lecture on how he made the lecture beforehand, hearing about his medical education class does not help me", "Ran over scheduled time, time spent setting presentation up", "Poll did not work", "Lecture was a bit long", and "Technology error".
Recommendations for improvement included: "Polling system didn't work which lengthen the overall lecture", "Being prepared for lecture on time, introducing the lecture did not start until 22 minutes late. Difficult to follow—it would help student follow along and understand concepts better if a handout was provided so we could focus more on listing instead of furiously trying to scratch everything down", "Provide handout", "Bring computer next time to hoop up so poll will work", and "Get the text thing to work better. Great job despite issues".
There were positive comments as well

EVALUATION PLAN

Overall, the project provided an introduction to state of the art in medical education. We often must do to learn. As such, there has been personal learning. It is, however, clear that the new lecture in not optimal from a student perspective. The technology is frustrating and lengthening the learning process.

Given the short comings of the learning exercise I will need to use the concepts of continuous quality improvement moving forward. After each lecture students provide feedback. These data will be used to guide the next generation of the learning experience.

IMPACT/LESSONS LEARNED

Incorporation of new technology in an active learning exercise is not without difficulty

Continuous improvement can be used to optimize a new teaching format

When learning experience is optimized, this could be expanded to other learning experiences in the surgical clerkship

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REACH
Redesigning Education to Accelerate Change in Healthcare

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