EASEMED: Exploring Asynchronous Strategies for Emergency Medicine Residency Transition

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Abstract

- **Introduction:** Courses in preparation for residency are becoming increasingly common during fourth year medical student education, including specialty-specific courses. Emergency medicine transition to residency courses face a unique challenge of incorporating dynamic curriculum with the need for hands-on sessions while maintaining learner attention and motivation. These courses may be further improved by implementing a hybrid model, which encourages asynchronous, self-driven learning, compared to traditional classroom models.
- **Methods:** The curriculum was split into three different categories: classroom-based lectures, hands-on sessions involving procedures and simulations, and online asynchronous learning. In general, the classroom-based lectures and hands-on sessions took place in the morning with asynchronous learning taking place in the afternoons. This course was assessed with feedback provided by students in pre- and post-course surveys. These surveys assessed students' learning history and preferences. Questions on the survey were assessed using a 5-point Likert scale (1= strongly disagree, 5= strongly agree). Free-text feedback was obtained from the curriculum feedback section of the Stony Brook University School of Medicine's optional overall course evaluation.
- **Results:** Of the fourteen students taking the course, eight students completed both the pre- and post-course surveys. In the pre-course survey, most respondents indicated they prefer to learn at their own pace and prefer hands-on sessions compared to traditional lectures on similar topics. In the post-course survey, all respondents indicated that they found the asynchronous portions beneficial and that they improved their knowledge and skill base of emergency medicine relevant topics.
- **Discussion:** Overall, students reported a preference for the hybrid curriculum, which supported learning at their own pace and the ability to learn effectively from asynchronous learning. All students who completed the surveys agreed that they improved their knowledge in preparation for residency and that they would recommend the course to future peers. We believe that this curriculum shows medical students can effectively learn through hybrid methods just as well if not better than traditional classroom methods to prepare for emergency medicine residency.

Introduction

- The fourth year of medical school is sometimes seen as a possible disruption to learning prior to residency due to most of the clinical undergraduate education occurring during the third year.
- Many consider the spring semester of their fourth year to be an ideal time to prepare for residency.
- Multiple studies have shown the benefits of specialty specific transition to residency (TTR) courses, including in pediatrics, surgery, and internal medicine.
- Over 100 institutions in the American Association of Medical Colleges have a form of TTR incorporated in their curriculum, speaking to their importance and impact.
- Traditional TTR courses have been largely classroom based but there have been successful cases of incorporating an online or hybrid model for medical student learning and residency preparedness to TTR courses.

Objectives

- To take an already established TTR course tailored for Emergency Medicine with historically classroom-based learning sessions and incorporate various learning modules for a hybrid course, including procedural skills, simulations, web-based modules.
- To assess student's learning preferences, ability to learn under a hybrid module, and their confidence in emergency medicine residency preparedness before and after participating in the TTR course.

Materials and Methods

- The new curriculum was implemented during a two-week TTR course designed for fourth year medical students going into Emergency Medicine at the Stony Brook University School of Medicine.
- It combined 3 different types of learning modalities- classroom based lectures, simulation/skills sessions, and online modules that were done asynchronously as seen below in Figure 1.
- All students enrolled in the course were invited to participate, with a pre- and post-course survey.

Monday	Tuesday	Wednesday	Thursday	Friday
Skills Session and Simulation	Classroom Lecture	Classroom Lecture	Classroom Lecture	Classroom Lecture
	Classroom Lecture	Classroom Lecture	Classroom Lecture	Classroom Lecture
	Classroom Lecture	*Lunch*	Classroom Lecture	Classroom Lecture
Lunch	*Lunch*	*Skills Session and Simulation*	*Lunch*	*Lunch*
Asynchronous / Online modules	Asynchronous / Online modules		Asynchronous / Online modules	Asynchronous / Online modules
Asynchronous / Online modules	Asynchronous / Online modules	Asynchronous / Online modules	Asynchronous / Online modules	Asynchronous / Online modules

Figure 1- Example one week hybrid curriculum with classroom lectures, simulations, skills sessions, and online modules

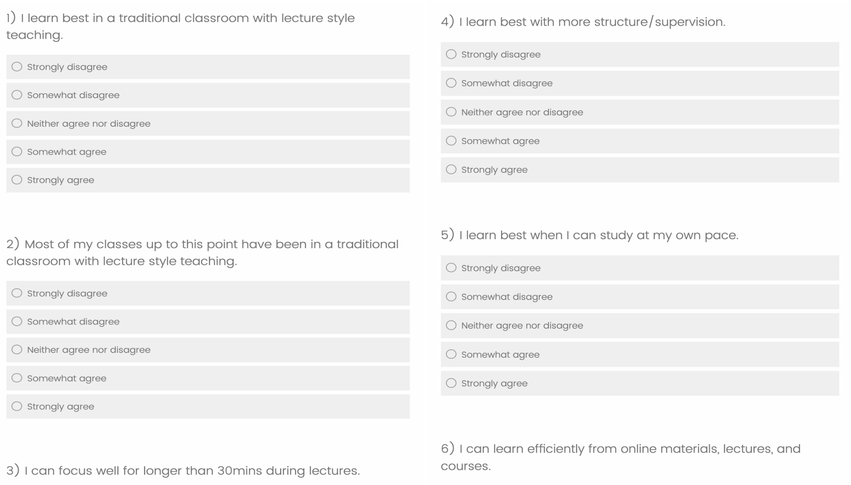
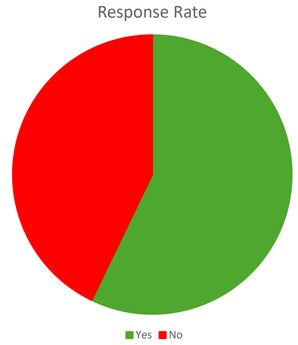


Figure 2- Example questions from the pre- and post-survey that participants filled out in regards to learning preferences and personal styles

Results



- Approximately 57% (8/14) response rate with pre- and post-survey.
- Majority of participants preferred self-paced studying and learning
- At the same time, majority of participants disagreed that they learned best in a classroom.
- All participants (8/8) endorsed being able to effectively learn from online materials, preferred hands-on sessions compared to lectures, and would recommend this course to peers.

Figure 3- Response rate to pre- and post-course survey from the 14 students enrolled

Discussion

- Students in this study favorably viewed the hybrid curriculum, with all students who completed both surveys indicating that they felt the hybrid model was beneficial and that they felt better prepared for residency.
- This is consistent with other studies that showed that students prefer flexible learning modalities that they can tailor to their own learning styles compared to traditional classroom-based models.
- This study was significantly limited for a multitude of reasons including a small sample size and low response rate.
- Further studies should also investigate long term effects of these hybrid asynchronous changes on sustained knowledge retention and clinical performance.
- Another limiting factor that may have had significant bias in this study is that of the 14 potential participants, only about half were planning on continuing their training post-graduation in an emergency medicine residency.

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