UC Irvine
Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title
Learning Moment: Features of Online Asynchronous Learning Tools That Maximize Acceptance and Adoption by Medical Students

Authors
Chu, A
Biancarelli, D
Drainoni, M
et al.

Results: Thirty-eight members from the five health care professions participated in the simulation day in July 2017. In the self-assessment, significant improvements in communication about patient care, patient safety, and confidence as a member of the health care team were found post-simulation (p < 0.0001 for all three areas). Participants felt significantly more comfortable approaching all of the other health care disciplines about error (p < 0.05). There was also an increase in overall trust and respect among the providers (p < 0.05). However, there was no significant improvement in approaching nursing, pharmacists, RTs, or medics with questions.

Conclusions: This IPE simulation improved personal confidence in communication and identity as a member of a healthcare team. Learners perceived an increase in trust and respect among the various health care professions represented in this study, especially in regards to error reporting.

23 Is the Number of Intubations Correlated with Proficiency in Milestone PC10: Airway Management?

Biggs D, Esposito A, Walsh B, Fiesseler F, / Morristown Medical Center, Morristown, New Jersey

Background: It is a well-established tenet of medicine that more frequent performance of a procedure leads to increased competency. It is unclear, however, whether more frequent performance of a procedure correlates with improved self-assessment and core faculty assessment of the corresponding Emergency Medicine milestone.

Objectives: We sought to determine if the number of intubations a resident has performed correlates with his self-assessment and with the core faculty's assessment of Milestone PC10: Airway Management.

Methods: Using the scoring system established by the American Board of Emergency Medicine, all residents (n=25) in a three-year residency completed self-assessments of the 23 milestones, including PC10: Airway Management. Core faculty also assessed all residents on the 23 milestones. The number of intubations performed by each resident was then recorded using their procedure logs. A Pearson correlation coefficient and significance level was calculated between self-assessment on PC10 and number of intubations, and also between core faculty assessment on PC10 and the number of intubations.

Results: All of 25 residents completed self-assessments and were evaluated by the core faculty. The correlation between self-assessment on PC10 and the number of intubations was R=0.57, (p<0.05). See Figure 1. The correlation between core faculty assessment on PC10 and the number of intubations was R=0.59 (p<0.05). See Figure 2.

Conclusions: Self-assessment and core faculty assessment of the Milestone PC10: Airway Management are well-correlated with the number of intubations a resident has performed. This suggests that the milestone is a reliable indicator of proficiency.

Intubations vs Self Assessment
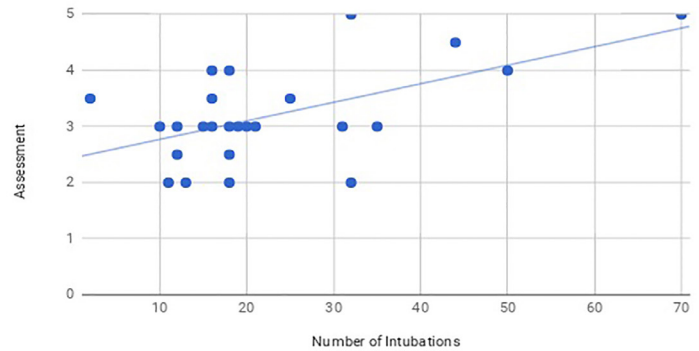
Intubations vs Core Faculty Assessment
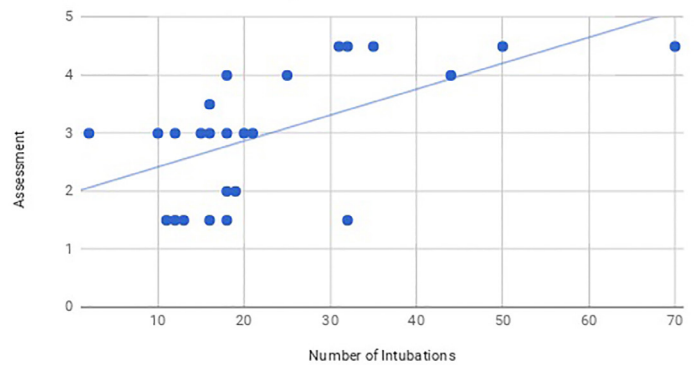
24 Learning Moment: Features of Online Asynchronous Learning Tools That Maximize Acceptance and Adoption by Medical Students

Chu A, Biancarelli D, Drainoni M, Schneider J, Wang C, Sheng A, /Boston University School of Medicine, Boston, Massachusetts

Background: Recently introduced in the literature, Learning Moment (LM) is a novel, unique, web-based asynchronous educational tool designed to optimize experiential learning. Medical students log concise clinical pearls for reflection and review in the form of "learning moments", which are shared with peers among an entire community. Little is known about what features such educational tools like LM should have to maximize learner engagement.

Objectives: We aim to identify LM features that would optimize acceptance and use by medical students.

Methods: We implemented LM at a tertiary care emergency department that hosts an emergency medicine residency and medical student clerkships. Students who rotated in our department from August 2016 to April 2017 were sent email invitations to participate in our study. We employed the System Usability Scale (SUS) questionnaire, a validated, industry standard to evaluate the usability of LM. We interviewed participants and analyzed their transcripts using standard qualitative methods to understand what features promoted LM's acceptance and use.

Results: Thirty participants out of 70 invited completed the SUS questionnaire. LM's aggregate score was 80.9, placing it in the top 10th percentile for ease of usability when benchmarked against other websites. Roughly 50% of students indicated that they would use the website frequently for learning purposes.

We conducted 13 interviews between January and March 2017. Three themes emerged from the interviews as features that optimized acceptance and adoption of LM. 1) Maximal simplicity in interface design and ease of use were key factors in student engagement. 2) The compatibility of LM's concept with students' personal learning preferences affected perceived usefulness. 3) Department-wide acceptance of LM by faculty and residents encouraged adoption into student workflow. Themes were shaped by students' time scarcity, competing priorities, and availability of more traditional learning resources.

Conclusions: Maximal simplicity and ease of use, compatibility with individual learning styles, and multi-level community engagement impacted the acceptance and adoption of LM by medical students. Our results inform future design and implementation of new online asynchronous learning educational technologies such as LM.

Table 1. Participant survey responses.

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Would frequently use website	7%	17%	30%	43%	3%
Website was simple	3%	0%	3%	60%	33%
Website was easy to use	3%	0%	0%	57%	40%
Can use website without technical support	7%	0%	0%	13%	80%
Website functions were well integrated	3%	0%	10%	60%	27%
Website was consistent	3%	3%	7%	53%	33%
People will learn to use website quickly	3%	0%	0%	37%	60%
Website was very intuitive	3%	0%	3%	40%	53%
Confident using this website	3%	0%	3%	37%	57%
Can use website without learning anything new	3%	3%	0%	20%	73%

25 Medical Student Educational Experiences and Completion of Learning Objectives in the Emergency Department

Murray C, Shenvi C, /University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Background: The Emergency Department (ED) provides a unique learning environment in which medical students can gain experience with managing acute, undifferentiated patients. However, the fast-paced nature of the ED and preceptor variation limits standardized teaching. In order to optimize students' educational experiences we sought to better understand with whom and where teaching occurs under our current clerkship design.

Objectives: Identify the most effective educational interactions for 4th-year medical students during their ED rotation, specifically comparing shifts in which they worked primarily with residents or with faculty.

Methods: This is a prospective study of procedure cards and surveys submitted by medical students as part of their month-long 4th year clinical rotation in the ED between 05/2017 and 11/2017 at a tertiary care academic ED. Students marked which topics or procedures they had reviewed, and who had precepted them. In an exit survey, students were asked to rate how often they received individualized teaching and whether their educational goals were met when working with residents and attendings on a 10 point Likert scale. Qualitative and quantitative data were collected anonymously with IRB exemption.

Results: Shift card data was collected from 41 students. Attendings tended to precept visual diagnostics while residents tended to teach technical procedures. Twenty-two students completed the exit survey. Results showed that students felt they received individualized teaching from both attendings and residents (7.9 and 8.1 respectively, p = 0.066). Students felt their goals were met more when reporting to the residents than attendings (8.7 and 7.7 respectively, p = 0.045). Themes noted in the open-ended portion of the survey were that students wanted more individualized experiences with the attendings, and requested more dedicated teaching shifts.
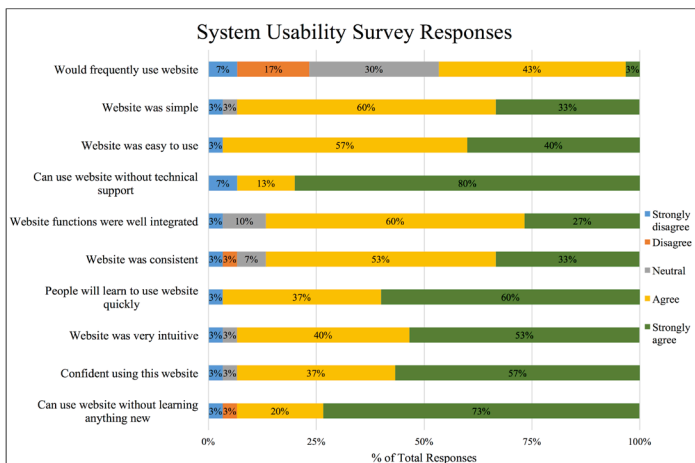

Figure 1. Participant survey responses.