Using Learning Analytics to Evaluate Self-Regulation of Longitudinal Integrated Clerkship Students in a Flipped Clerks

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"Learning Analytics is the use of intelligent data, learner-produced data, and analysis models to discover information and social connections for predicting and advising people's learning." George Siemens
<table>
<thead>
<tr>
<th>Academic Analytics</th>
<th>Learning Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>A process for providing higher education institutions with the data necessary to <strong>support operational and financial decision making</strong>(^*)</td>
<td>The use of analytic techniques to help target instructional, curricular, and support resources to <strong>support the achievement of specific learning goals</strong>(^*)</td>
</tr>
<tr>
<td>Focused on the <strong>business of the institution</strong></td>
<td>Focused on the <strong>student and their learning behaviors</strong></td>
</tr>
<tr>
<td><strong>Management/executives</strong> are the primary audience</td>
<td><strong>Learners and instructors</strong> are the primary audience</td>
</tr>
</tbody>
</table>
BACKGROUND

Predictive Analytics
- Predict future outcomes and behavior

Analyzing Trends
- Identify historical trends and correlations

Reporting Data
- Summarize historical data
2010 - held the first of annual curriculum retreats
  Addressed the FMEC recommendations, and anticipated
  future developments (new academy for U of T in Mississauga)
  Remote locations created a barrier for our centralized seminars
  Need for change

Buy in for change within Anesthesia UME

All members involved in e-module development, simulation or CBL

Yearly review of progress and vision for change
E-LEARNING BACK BONE

- Preoperative Evaluation
- Airway
- Obstetrics
- Regional Anesthesia
E-LEARNING BACK BONE

- Online eModules
- Orientation + Sim eModule
- Entry Simulation Day 2
- OR time (Days 1-8)
- Exit Simulation Day 9
- Case Discussion + Jeopardy
- Summative Exam Day 10
E-LEARNING BACK BONE

Interactive Acute Pain Management eModule

Content Author: Diana Tamir, MD
Module Developer: Clyde Matava, MBChB Mmed
Module Designer & Illustrator: Lauren DiVito, MScBMC

Presented by the Anesthesia Undergraduate Clerkship Committee
Department of Anesthesia
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The 5 STEP GUIDE FOR COMPLETION OF eMODULES FOR ANESTHESIA CLERKSHIP STUDENTS

Undergraduate Medical Education Committee
Department of Anesthesia and Pain Medicine
University of Toronto

1. Review & finish eModules need to be completed by Day 2 of rotation.

2. All eModules need to be completed before Day 6.

3. On the Monday Day 8 students who have not completed the eModules by 12noon will receive a reminder email with a copy sent to the site coordinator.

4. The day before the end of rotation, eModule completion will be checked again. If eModules are still not completed, the case will be returned to the Program Director.

5. The course will not be marked as complete unless all modules have been completed. Exit Simulation (2nd Sim Day)

SAT/SUN  DAY1 MON  DAY2 TUE  DAY3 WED  DAY4 THUR  DAY5 FRI  SAT/SUN  DAY6 MON  DAY7 TUE  DAY8 WED  DAY9 THUR  DAY10 FRI

Entry Simulation (1st Sim Day)

Exam Day

Draft Version 2015112.2  Approved mm/dd/yyyy
HYPOTHESIS

Self-regulation differences between LIC students and Non-LIC students
E-LEARNING BACK BONE

Frequency of Access

Number of hits

Airway E-Module | OB E-Module | Regional E-Module | Pre Op E-Module | Course Material | Course Description Simulation | Jeopardy Seminar Recordings
RESULTS

Access by time
RESULTS - INTRODUCTION
RESULTS - FILES VIEWED
RESULTS - PROXIMITY

![Graph showing proximity data]

LIC = 1, NonLIC = 44
RESULTS - FREQUENCY OF VIEWS
RESULTS - HOURS ACCESSED

Access by day of week

<table>
<thead>
<tr>
<th>Day</th>
<th>NonLIC</th>
<th>LIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>Monday</td>
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<td>500</td>
<td>425</td>
</tr>
<tr>
<td>Saturday</td>
<td>125</td>
<td></td>
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</tbody>
</table>
How many hours a week do anesthesia residents spend on podcasting?