Balancing Student Learning with Caseload and Hospital Efficiency

Andrew West, MEd, PhD
Colorado State University
Director – CVMBS Academy for Teaching & Learning

Washington State University
April 11, 2018
This thing is working

Yes

No
Balancing Student Learning with Caseload and Hospital Efficiency
Faculty time/effort

Student time/effort

Caseload/revenue generation
Faculty time/effort →

Student time/effort ↑

Caseload/revenue generation ↑
Faculty time/effort

Student time/effort

Caseload/revenue generation
Faculty time/effort

Student time/effort

Caseload/revenue generation
Story #1
Story #1

- Get dressed first
- Go to school third
- Eat dinner seventh
- Put away dishes sixth
- Eat lunch fifth
Get dressed first

Go to school third

Alli

Eat dinner seventh

Eat lunch fifth

Eat breakfast second

Eat bread

No food

Backpack coat four shoes
GET DRESSED

First

Go to school

Allie

Third

Eat dinner

Seventh

Put a hat

Sixth

Eat lunch

Fifth

Eat breakfast

Second

No your backpack coat four hoes
Story #2
Article Title

John Merton

University of California

May 15, 2016

1. Introduction


2. Methods


3. Results

Nunc ullamcorper, mi non faucibus lacinia, dolor risus lacinia justo, nec feugiat odio velit sit amet nibh.

4. Discussion

Aliquam erat volutpat. Ut enim ad minima veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

5. Conclusions


Effective Methods for Capturing Cattle Rustlers

John Merton and Bonnie MacFarlane

February 27, 2017

1. Section


2. Section


How to make your strategy stick with a strategic story

Steven Calabro

February 27, 2017

1. Section


2. Section

Story #3
Ophthalmic anatomy
Outer, Fibrous Layer:

So, the anatomy. First of all, look at the eye as three layers. So, we have the outer layer, that is the fibrous layer and it’s made by the Cornea, which is in the front. That’s the surface you put your contact lens on. That’s supposed to be nice and transparent. You also have the Sclera, that is the white part behind your eye, almost if you’re looking at the person next to you, and you can see that they have a nice white Sclera, that is that part. And then we have the Limbus, which is the connection between the Cornea and the Sclera. The function of the outer layer is to protect, so when we, for example, get a corneal serration, we’ll talk more about that. Then, it’s actually just the nature of our Cornea as protective, that nothing went straight into the eye, and made us blind. Transmission, so that’s where important that our Cornea is nice and clear because if the Cornea is opaque, we can’t see anything. And then, refraction, and that has to do with vision as well, which we will talk more about in a lecture where we will talk about vision.
GET DRESSED FIRST
GO TO SCHOOL THIRD
EAT DINNER SEVENTH
PUT AWAY DISHES SIXTH
EAT LUNCH FIFTH
EAT BREAKFAST SECOND
NO YOUR BACKPACK FIRST FOURTH SIXTH
SHOE

It doesn’t have to be a zero sum game.
Strategies
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
1. Pre-Clinical Instruction

- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning
1. Pre-Clinical Instruction

✓ Asynchronous instruction that frees up time for hands-on learning and clinical reasoning
  • eLectures/flipped classes
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- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning
- More practice developing clinical reasoning skills
1. Pre-Clinical Instruction

- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning

- More practice developing clinical reasoning skills
  - Adaptive assessments
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

X

Choice C
Adaptive Assessments
Adaptive Assessments

Case Presentation

Choice A
- Choice B
  - Choice C

Choice A
- Choice B
  - Choice C
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C

X

X
Adaptive Assessments

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C
1. Pre-Clinical Instruction

- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning

- More practice developing clinical reasoning skills
  - Adaptive assessments
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- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning
- More practice developing clinical reasoning skills
- Core competencies and alignment of topics
Core Competencies and Alignment of Topics
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Core Competencies and Alignment of Topics
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1. Pre-Clinical Instruction

- Asynchronous instruction that frees up time for hands-on learning and clinical reasoning
- More practice developing clinical reasoning skills
- Core competencies and alignment of topics
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
Strategies

1. Pre-clinical instruction

2. Clinical instruction

3. Clinic scheduling

4. Technology

5. Assessment
Faculty with students on service] do not necessarily have a longer day or spend more time with patients, and having students does not inevitably decrease productivity (McKee, Steiner-Grossman, Burton, & Mulvihill, 1998). In fact, students may actually increase productivity (Fontana, Devine, & Kelber, 2000; Hildebrandt, 2001). However, working with a student undeniably makes a clinical day more complex. Reducing the complexity wherever possible is the key to enjoyment of the day when a student is there.

(Burns et al, 2006)
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(Burns et al, 2006)
2. Clinical Instruction

- Support residents and house officers in teaching and mentoring strategies
2. Clinical Instruction

✓ Support residents and house officers in teaching and mentoring strategies
  • Educational seminars
2. Clinical Instruction

☑ Support residents and house officers in teaching and mentoring strategies
  • Educational seminars
  • Peer observations of teaching
  • Faculty observations of teaching with reflection
2. Clinical Instruction

✔ Support residents and house officers in teaching and mentoring strategies

- Educational seminars
- Peer observations of teaching
- Faculty observations of teaching with reflection
- Communication training
2. Clinical Instruction

- Support residents and house officers in teaching and mentoring strategies
2. Clinical Instruction

- Support residents and house officers in teaching and mentoring strategies
- More efficient use of clinical teaching time
2. Clinical Instruction

- Support residents and house officers in teaching and mentoring strategies
- More efficient use of clinical teaching time
  - One-minute preceptor
# One-Minute Preceptor

(Neher, Gordon, Meyer, & Stevens, 1992)

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<tr>
<td>2. Probe for supporting evidence</td>
<td><em>What led you to that …</em></td>
</tr>
<tr>
<td>3. Teach general rules</td>
<td><em>Many times when…</em></td>
</tr>
<tr>
<td>4. Reinforce what was right</td>
<td><em>You did an excellent job of…</em></td>
</tr>
<tr>
<td>5. Correct mistakes</td>
<td><em>Next time this happens, maybe try…</em></td>
</tr>
</tbody>
</table>
2. Clinical Instruction

➢ Support residents and house officers in teaching and mentoring strategies

✔ More efficient use of clinical teaching time
  • One-minute preceptor
  • Targeted teaching rounds with individual accountability
What’s going to happen to the gap between the wooden blocks when you tighten the screw?

Assumptions:
- \( \text{drill hole} = \) inner (=core) diameter of screw
- The wooden blocks can only shift left-right they can NOT rotate

Please select your answer:
A. It’s going to stay the same
B. It’s going to close (i.e. decrease)
C. It’s going to enlarge (i.e. increase)

Please explain your choice:
2. Clinical Instruction

➢ Support residents and house officers in teaching and mentoring strategies

✓ More efficient use of clinical teaching time
  • One-minute preceptor
  • Targeted teaching rounds with individual accountability
  • Develop and implement a time-saving plan
Time Saving Plan

Teacher
Time Saving Plan

Teacher

- Student 1
- Student 2
- Student 3
- Student 4
Time Saving Plan

Teacher

Student 1

Student 2

Student 3

Student 4

Case 1

Case 2

Case 3

Case 4

Case 5

Case 6

Case 7

Case 8
Time Saving Plan

- Interns
  - Teacher
    - Residents
      - Student 1
        - Case 1
      - Student 2
        - Case 2
      - Student 3
        - Case 3
      - Student 4
        - Case 4
        - Case 5
        - Case 6
        - Case 7
        - Case 8
Time Saving Plan

- Interns
  - Teacher
  - Residents

- Student 1
  - Case 1
  - Case 2

- Student 2
  - Case 3
  - Case 4

- Student 3
  - Case 5
  - Case 6

- Student 4
  - Case 7
  - Case 8
Time Saving Plan

Interns
Teacher
Residents

Student 1
Student 2
Student 3
Student 4

Case 1
Case 2
Case 3
Case 4
Case 5
Case 6
Case 7
Case 8

Residents
Interns
Time Saving Plan

- Interns
- Teacher
- Residents

- Student 1
- Student 2
- Student 3
- Student 4

- Case 1
- Case 2
- Case 3
- Case 4
- Case 5
- Case 6
- Case 7
- Case 8
Time Saving Plan

Interns
Teacher
Residents

Student 1
Student 2
Student 3
Student 4

Case 1
Case 2
Case 3
Case 4
Case 5
Case 6
Case 7
Case 8
Time Saving Plan

- Interns
  - Students
    - Student 1
    - Student 2
    - Student 3
    - Student 4

- Teacher

- Residents

- Cases
  - Case 1
  - Case 2
  - Case 3
  - Case 4
  - Case 5
  - Case 6
  - Case 7
  - Case 8
Time Saving Plan

- Interns
- Teacher
- Residents

Student 1

Student 2

Student 3

Student 4

Case 1

Case 2

Case 3

Case 4

Case 5

Case 6

Case 7

Case 8
2. Clinical Instruction

➢ Support residents and house officers in teaching and mentoring strategies

✓ More efficient use of clinical teaching time

• One-minute preceptor
• Targeted teaching rounds with individual accountability
• Develop and implement a time-saving plan
2. Clinical Instruction

- Support residents and house officers in teaching and mentoring strategies
- More efficient use of clinical teaching time
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
The expert preceptor is constantly doing “invisible planning”—thinking ahead about other activities that will be helpful to the student’s progress (Skeff, Bowen, & Irby, 1997).

3. Clinic Scheduling
3. Clinic Scheduling

Weekly Schedule

Day 1: Orientation + Cases
Day 2: Cases
Day 3: Cases
Day 4: Cases
...
Day 9: Cases
Day 10: Cases + wrap-up
3. Clinic Scheduling

**Weekly Schedule**

Day 1: Orientation + **Pre-test**

Day 2: **Lab**

Day 3: Cases

Day 4: **Problem Solving Exercises**

... 

Day 9: Cases

Day 10: **Post-test** + wrap-up
3. Clinic Scheduling

**Daily Schedule**

- 8:00-9:00am – rounds
- 9:00-12:00pm – cases
- 12:00-12:01pm – lunch
- 12:01-3:00pm - cases
- 3-4:00pm – rounds
- 4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds  +40min
9:00-12:00pm – cases
12:00-12:01pm – lunch
12:01-3:00pm - cases
3-4:00pm – rounds
4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds +40min

9:00-12:00pm – cases

12:00-12:41pm – lunch

12:01-3:00pm - cases

3-4:00pm – rounds

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds  +40min

9:00-12:00pm – case/cases

12:00-12:41pm – lunch

12:01-3:00pm - cases

3-4:00pm – rounds

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

**Daily Schedule**

8:00-8:20am – rounds +40min

9:00-12:00pm – case/cases + really focused teaching

12:00-12:41pm – lunch

12:01-3:00pm - cases

3-4:00pm – rounds

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds +40min

9:00-12:00pm – case/cases + really focused teaching

12:00-12:41pm – lunch

12:01-3:00pm – cases + focused observations

3-4:00pm – rounds

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

**Daily Schedule**

8:00-8:20am – rounds

9:00-12:00pm – case/cases + really focused teaching

12:00-12:41pm – lunch

12:01-3:00pm – cases + focused observations

3-4:00pm – rounds

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds

9:00-12:00pm – case/cases + really focused teaching

12:00-12:41pm – lunch

12:01-3:00pm – cases + focused observations

3-4:00pm – rounds + debrief the observations

4-6:00pm – cases/charting/etc.
3. Clinic Scheduling

Daily Schedule

8:00-8:20am – rounds +40min

9:00-12:00pm – case/cases + really focused teaching

12:00-12:41pm – lunch

12:01-3:00pm – cases + focused observations

3-4:00pm – rounds + debrief the observations

4-5:00pm – cases/charting/etc. + summarize key ideas from the day
3. Clinic Scheduling

Focused half days - The faculty member can see the projected schedule and select one or two patients on whom the student can concentrate for an entire morning or afternoon (ideally with a focus on a timely learning issue for a student)

(Barker and Pittman, 2010)
3. Clinic Scheduling

Focused observation -- The student adopts a “fly on the wall” approach with the patient encounters. This gives the student the opportunity to observe you as a role model for specific aspects of the patient visit and provides material for a period of reflection at the end of the day.

(Barker and Pittman, 2010)
Wave-scheduling -- two or three patients are scheduled at the same time and then that time slot is followed by a 10 or 15 min break. The student can see one patient while the faculty member sees the others. There is time for the faculty member to see the student’s patient and not fall behind.

(Barker and Pittman, 2010)
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
4. Technology

Clip: “Rage Against the Machines”
From: Marketplace Morning Report with David Brancaccio
Date: 4/21/2017

4. Technology

Clip: “Rage Against the Machines”
From: Marketplace Morning Report with David Brancaccio
Date: 4/21/2017

4. Technology

- Adaptive learning
Adaptive Learning

Case Presentation

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C

Choice A

Choice B

Choice C
4. Technology

- Adaptive learning
- Virtual reality/360° cases with individual decision making
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
5. Assessment

- Multiple points throughout the program
- Multiple formats throughout the program
- Mixture of high stakes and low stakes
5. Assessment

Year 1 (didactic)
Year 2 (didactic)
Year 3 (didactic/clinical)
Year 4 (clinical)

Knowledge
Skills
Thinking
5. Assessment

Year 1 (didactic)
Year 2 (didactic)
Year 3 (didactic/clinical)
Year 4 (clinical)

Knowledge
Skills
Thinking
5. Assessment

Year 1  (didactic)
Year 2  (didactic)
Year 3  (didactic/clinical)
Year 4  (clinical)

Knowledge
Skills
Thinking
### ASSESSING PROBLEM SOLVING SKILLS

<table>
<thead>
<tr>
<th>Method</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation</td>
<td>10</td>
</tr>
<tr>
<td>Report</td>
<td>10</td>
</tr>
<tr>
<td>Clinical assessment</td>
<td>10</td>
</tr>
<tr>
<td>Essay Question</td>
<td>10</td>
</tr>
<tr>
<td>Observed long case</td>
<td>10</td>
</tr>
<tr>
<td>Problem Based Learning (PBL)</td>
<td>10</td>
</tr>
<tr>
<td>Poster</td>
<td>10</td>
</tr>
<tr>
<td>Simulated patient interviews</td>
<td>10</td>
</tr>
<tr>
<td>Viva voce (verbal exam)</td>
<td>10</td>
</tr>
</tbody>
</table>

### ASSESSING PERFORMANCE OF PROCEDURES AND DEMONSTRATING TECHNIQUES

<table>
<thead>
<tr>
<th>Method</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery performance tests</td>
<td>10</td>
</tr>
<tr>
<td>Video skill assessment</td>
<td>10</td>
</tr>
<tr>
<td>Assessment of competence in simulation</td>
<td>10</td>
</tr>
<tr>
<td>Case History exercises</td>
<td>10</td>
</tr>
<tr>
<td>Clinical tutor evaluation</td>
<td>10</td>
</tr>
<tr>
<td>Observed long case</td>
<td>10</td>
</tr>
<tr>
<td>Clinical tutor assessment</td>
<td>10</td>
</tr>
<tr>
<td>OSCE</td>
<td>10</td>
</tr>
<tr>
<td>Web-based skills assessment</td>
<td>10</td>
</tr>
<tr>
<td>Ward rating</td>
<td>10</td>
</tr>
<tr>
<td>Special clinical skills exam</td>
<td>10</td>
</tr>
<tr>
<td>Laboratory reports</td>
<td>10</td>
</tr>
<tr>
<td>Case presentation</td>
<td>10</td>
</tr>
<tr>
<td>Case assessment</td>
<td>10</td>
</tr>
</tbody>
</table>

### ASSESSING ABILITY TO REFLECTIVELY INTEGRATE LEARNING INTO PROFESSIONAL PRACTICE

<table>
<thead>
<tr>
<th>Method</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective journals</td>
<td>10</td>
</tr>
<tr>
<td>Simulations</td>
<td>10</td>
</tr>
<tr>
<td>Case Study</td>
<td>10</td>
</tr>
<tr>
<td>PBL</td>
<td>10</td>
</tr>
<tr>
<td>Clinical tutor evaluation</td>
<td>10</td>
</tr>
<tr>
<td>Portfolio</td>
<td>10</td>
</tr>
<tr>
<td>Critical incidents</td>
<td>10</td>
</tr>
<tr>
<td>Project</td>
<td>10</td>
</tr>
<tr>
<td>Log diary</td>
<td>10</td>
</tr>
<tr>
<td>Clinical experience record</td>
<td>10</td>
</tr>
<tr>
<td>Reflective case summary</td>
<td>10</td>
</tr>
<tr>
<td>Clinical tutor rating</td>
<td>10</td>
</tr>
<tr>
<td>Video taped consultation</td>
<td>10</td>
</tr>
<tr>
<td>Case presentation</td>
<td>10</td>
</tr>
</tbody>
</table>
## CLINICAL/PRACTICAL ASSESSMENT

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Cases</td>
<td>pp. 30-32</td>
</tr>
<tr>
<td>Practical Examination</td>
<td>pp. 30-32</td>
</tr>
<tr>
<td>Spot Examination</td>
<td>pp. 30-31</td>
</tr>
<tr>
<td>Objective Structured Clinical Examination (OSCE)</td>
<td>pp. 30-31</td>
</tr>
<tr>
<td>Objective Structured Practical Examination (OSPE)</td>
<td>pp. 30-31</td>
</tr>
<tr>
<td>Objective Structured Long Examination Record (OSLER)</td>
<td>pp. 30-31</td>
</tr>
<tr>
<td>Group Objective Structured Clinical Examination (GOSCE)</td>
<td>pp. 30-31</td>
</tr>
</tbody>
</table>

## OBSERVATION

<table>
<thead>
<tr>
<th>Observation</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor’s report</td>
<td>p. 32</td>
</tr>
<tr>
<td>Checklists</td>
<td>p. 32</td>
</tr>
<tr>
<td>Rating scales</td>
<td>p. 32</td>
</tr>
<tr>
<td>Patient report</td>
<td>p. 32</td>
</tr>
</tbody>
</table>

## PORTFOLIO AND OTHER RECORDS OF PERFORMANCE

<table>
<thead>
<tr>
<th>Record</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logbooks</td>
<td>p. 32-33</td>
</tr>
<tr>
<td>Portfolios</td>
<td>p. 32-33</td>
</tr>
<tr>
<td>Procedural Logs</td>
<td>p. 32-33</td>
</tr>
</tbody>
</table>
5. Assessment

- Multiple points throughout the program
- Multiple formats throughout the program
- Mixture of high stakes and low stakes
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
Strategies

1. Pre-clinical instruction
2. Clinical instruction
3. Clinic scheduling
4. Technology
5. Assessment
It doesn’t have to be a zero sum game.
References


NPR Clip: “04/21/2017: Rage against the machines”

http://www.npr.org/podcasts/381444599/marketplace-morning-report