Maximizing Learning Opportunities in a Blended Clinical Rotation Through the Use of Online Collaborative Tools

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Objectives

• List differences between face to face, online, and blended formats
• List common collaborative tools pertinent to online/blended learning
• Discuss the relevance of these tools in clinical rotations
• Share ideas and best practices with others interested in adapting a clinical rotation
Quick History of Learning
Merriam Webster’s definition...

1. The act or experience of one that learns
2. Knowledge or skill acquired by instruction or study
3. Modification of a behavioral tendency by experience (as exposure to conditioning)
Learning Theories

- **Recollection**: 900 B.C.E.
- **Behaviorism**: 880’s – 1960’s
- **Cognitive Information Processing**: 1970’s – 1980’s
- **Constructivism**: 1990 - Present

- **1992** Paivio Dual Coding Theory
- **1993** Gardner Multiple Intelligence
- **1998** Wegner Communities of Practice
- **2004** Siemans Connectivism
- **2006** Khan Academy
- **2008** MOOCs
How did we learn?
Traditional Face to Face
How are we learning now?
How will we learn tomorrow?
Connected Learner
Connectivism

- Knowledge exists in the world rather than simply in someone's brain.
- Capacity to know more is more critical than what is currently known.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Knowing where to find knowledge is as important as the knowledge itself.
Diagram showing the relationships between different types of social media tools, such as blogs, microblogs, wikis, and social bookmarking services, and how they interact with each other through a central figure labeled 'ME'. The diagram illustrates concepts like circles of trust, social media services, search, wikis, and email clients, among others. The relationships are depicted with arrows and text labels, indicating how information and interactions flow between these different tools and services.
How do we make sense of all these?
What tools support this type of learning?
Collaborative Tools & Activities

• Wiki
• Blog
• Online Communities
• RSS Feeds and Dashboards
• Discussion Boards
• Video Conferencing
• Flipped Classroom
Have you used any of the following professionally?

- Wikis
- Blogs and Microblogs
- Online communities
- RSS Feeds and Dashboards
- Discussion Boards
- Video Conferencing
- Flipped Classroom
WIKIs

wikispaces
wikis for everyone

collaborate with TWiki

Socialtext
Blogs & Microblogs

https://todaysmeet.com/AACOM-PCOM
Online Communities

Yahoo Groups

yammer

NING

SOCIALCAST
RSS Feeds & Dashboard

diigo

netvibes
Dashboard Everything

delicious

Reddit

hootsuite
Social Media Dashboard
Discussion Boards
Video Conferencing
Flipped Classroom
The development of four-week blended-learning pediatric clerkship for 3rd year medical students
Medical Education

• Tradition
  • Classroom: Years 1 and 2
  • Clinical Rotations: Years 3 and 4

• Increase in class size
  • Accommodate aging population
  • Between 2002-2012,
    • 19,456 to 25,321 per year
    • Increase in 5865 students per year (a 30% increase)
Opportunity

• Increased class size → Increase clinical rotations

• Three challenges and opportunities:
  1. Inconsistent clinical exposure to patients
  2. Inconsistent training & quality of preceptors
  3. Insufficient number of clinical training sites
Opportunity for PCOM

- Approximately 300 students per graduating class
- On average, 33 students per four-week rotation
- 18 clinical training sites
- Three States:
  - Pennsylvania
  - New Jersey
  - Delaware
Solution

- Four-week blended-learning program for third-year medical students at PCOM
- Combine the following
  - online collaborative learning
    - asynchronous discussion boards and blogs
    - podcasts
    - video demonstrations
    - didactic presentations
    - scenario-based instruction
    - virtual patients
    - online reference material and resources
  - face-to-face clinical instruction with a faculty preceptor.
Solution

- Learning Theories
  - Problem Based Learning
    - Teacher as tutor
  - Online Collaborative Learning
    - Teacher as facilitator
- Connectivism
  - Teacher as networker
- Constructivism
  - Teacher as mentor
Course Elements

- Discussion boards & blogs
- Podcasts
- Video demonstrations
- Didactic presentation,
- Scenario-based instruction
- Virtual patients
- Online reference material and resources
Getting Started

Blended Learning

During this rotation, students will have the unique opportunity of combining face-to-face clinical experience with a number of other learning activities, such as eLearning opportunities and community partnerships. While seeing patients in the clinical setting three days per week, students will learn various aspects of pediatric care and applications to patients. The remaining two days per week will be spent participating in eLearning activities (reviewing video vignettes, exploring videos, engaging in discussion boards and remote clinical encounters, reflecting on experiences) and exploring community outreach programs for children in the Philadelphia area.

What is elearning?

This short video describes the value, challenges and opportunities of elearning.

Khan academy

The Khan Academy is recognized as a leader and innovator in k-12 education. This TED talk, about 20 minutes, elaborates on advantages and challenges of learner-centered elearning. Many of the aspects apply to higher education and medical education.

Sample of eLearning technologies

Learning management systems

Learning Management Systems (LMS) or Course Management Systems (CMS) are comprehensive tools that package a variety of learning activities and assessments in a centralized location, made available to learners at remote locations through the use of the internet. While there are a number of products available, Blackboard is the platform used at PCOM.

Blogs

A blog is a tool that allows students to post entries and respond to other learners' entries. A number of products are available. Some are private (e.g., require a password and rights to post), and some are public. The Blogs used in this course are private, shared only with the other students and instructors for the course.

Wikis

A wiki is a collaborative work space available to multiple users who can contribute to the creation of the product.

Videos and podcasts

Content can be delivered in a number of ways. In addition to narrative (articles and handouts), videos and podcasts can be used in learning to convey important information. These
Discussion Boards

PCOM PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE

Discussion Board

Create Forum

Delete

<table>
<thead>
<tr>
<th>Forum</th>
<th>Description</th>
<th>Total Posts</th>
<th>Unread Posts</th>
<th>Total Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion (week one)</td>
<td>After reading Pediatrics 101 and watching Pediatric Examination video, identify strategies that may help you interact with children and families.</td>
<td>12</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Discussion (week two)</td>
<td>Identify one practice guideline intended to prevent illness or promote health in children. Provide evidence-based references and/or recommendations (using AMA style).</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Discussion (week three)</td>
<td>Identify nutritional requirements for infants or children. Provide evidence-based references and/or recommendations (using AMA style).</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Discussion (week four)</td>
<td>Identify a medical condition in one of your patients and describe how the disease affected the lives of the child and family.</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Displaying 1 to 4 of 4 Items

Show All | Edit Paging
A lot of the medical students in the video spoke about being worried about maneuvering the baby or hurting the child. As a mother, I’m not so concerned with that and I feel very comfortable with newborns and infants. I do, however, always have the parents in the back of my mind. I just remember my first few visits to the pediatrician. In my sleep-deprived state of anxiety I was worried about everything. Even when the physician, who was a very experienced pediatrician with children of his own, placed my child on the exam table, my first instinct was to grab him just to make sure he wouldn’t fall off. I realized on Friday that this was in the back of my mind with every patient we saw.

I liked how this video presented some strategies for examination of children. For example, they showed how to insert the tongue blade laterally so the child won’t bite down immediately. Also, using your fingers as candles and having the child blow them out while simulatenously listening to breath sounds, was a very helpful suggestion.
Before you start morning work rounds in the newborn nursery, the nurse informs you that she is concerned about an infant, Adam Mason, who was born by c-section two hours ago and is breathing fast.

Your preceptor asks you first to review Adam’s chart. After you discuss your findings, the two of you will examine the baby.

Navigation Tip: To move to the next card in the case, click the Forward button at the top of the page.

As you work through the case, add key clinical findings and diagnoses to consider on your differential to the clinical reasoning toolbar.

Newborns in the nursery
Online Training and Avatars
References and Links to Trusted Sources

Section on Infectious Diseases
Education | Policy Statements | Certification | Mini Reviews | Resources

FEATURED VIDEO
A View Through the Otoscope: Distinguishing Acute Otitis Media from Otitis Media with Effusion
An illustration

- Four-week blended-learning program for third-year medical students at PCOM
- Combine the following
  - online collaborative learning, and
  - face-to-face clinical instruction
- This program will
  - improve consistency across training sites,
  - maximize learning opportunities,
  - reduce the burden of clinical preceptors at the training sites,
  - help learners link experiences to previous knowledge,
  - increase the number of educational opportunities for students.
Your Thoughts & Ideas
References


• California Vaccines for Children. EZIZ Vaccine Administration Online Training. http://eziz.org/eziz-training/


Selected Organizations & Resources

**EDUCAUSE**
UNCOMMON THINKING FOR THE COMMON GOOD

**ASTD**
WORKPLACE LEARNING & PERFORMANCE

**GENERALISTS IN MEDICAL EDUCATION**

**IAMSE**

Centre for Learning & Performance Technologies
Thank You

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