Improving Exam Quality Through A Peer-Review Process

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Die-Hard EQUATERS
(Exam QUality Assurance TEam)

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Dr. Robert Terreberry
Session Objectives

By the end of this session, participants will be able to:

- To describe an effective process to consistently develop quality exams in an integrated pre-clinical curriculum.
- To identify challenges and strategies for an inclusive process for faculty development on test item writing.
Background: The Framework and Assessment of CUSOM’s Pre-Clinical Curriculum

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
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<tbody>
<tr>
<td><strong>SEMESTER 1</strong></td>
<td><strong>SEMESTER 3</strong></td>
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<tr>
<td>Block 1 (10 weeks) Integrated Basic Science and Clinical Courses</td>
<td>Block 5 (10 weeks) Cardiovascular System</td>
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<tr>
<td>Block 2 (10 weeks) Integrated Basic Science and Clinical Courses</td>
<td>Block 6 (10 weeks) Blood/Lymph/Immune Integumentary System Renal System</td>
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<td><strong>SEMESTER 2</strong></td>
<td><strong>SEMESTER 4</strong></td>
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<td>Block 3 (10 weeks) Musculoskeletal System</td>
<td>Block 7 (10 weeks) Endocrine System GI System</td>
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<tr>
<td>Block 4 (10 weeks) Neurosensory System Psychiatry</td>
<td>Block 8 (10 weeks) Reproductive System Clinical Applications of Biomedical Sciences II/Introduction to Clinical Clerkships</td>
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Integrated Assessments: Weekly quiz and 3 Exams /Block
What is the most common pitfall in your institution’s exam construction or execution process?

• https://answergarden.ch/282761
Integrated Exam

Integrated Board-Style Exam

- Item quality
- Conflicting Knowledge
- Style consistency
- Redundancy

Redundancy

Conflicting Knowledge

Item quality

Style consistency
Pre-EQUATE Exam QA Process at CUSOM

1. **Exam Draft**
   - Read and revised by individual designated readers

2. **Item-writers**
   - Review the edits and approve or disapprove the changes

3. **Med Ed Department**
   - Finalize the exam

4. **Post Exam challenges and adjustment**
Exam Draft Constructed by the Course Director(s)

EQUATE revises and approves all test-items in QA sessions

Med Ed Department enters items to Exam Soft and execute the exam
Background: Charge of CUSOM-EQUATE
(since January 2014)

- To conduct the quality assessment process of test items for inclusion in the integrated examinations.
- To **collaborate with item writers** on necessary revision in **open-meetings** to ensure that the test items are **clear for assessing the intended concepts** and are formatted in compliance with **basic COMLEX standards**.
- To revise the test items at its members’ best capability to meet above mentioned standards.
- **To provide recommendations for future item development and pedagogical revision.**
- To establish or modify the item review process as needed in consultation with Senior Associate Dean for Academic Affairs and Research and with the approval of the Dean.
Preparation for EQUATE Launching

- Formal Announcement to the Faculty
- Faculty Development Sessions:
  - Item writing workshops (on-going)
  - Item submission guideline and checklist

CONTENT FOCUS and QA PROCESS

- NBOME BLUEPRINT
- EQUATE CHARGE and WORK FLOW

CUSTOM TEST ITEM SUBMISSION CHECKLIST

- DO
- DO NOT

GROUP ACTIVITIES

- SMALL-GROUP ITEM EDITING
- LARGE-GROUP SHARING
Execution: EQUATE Structure

- Chair (1)
- Co-Chair (2)
- Core Members (8-10)
- Training Members
Execution: **EQUATE Process**

- **Time Availability**
  - Survey sent to EQUATErs, CDs, instructors

- **Multi small, open, focused EQUATE sessions scheduled and completed**

- **Doodle simplifies scheduling**
  - The scheduling tool you'll actually use. Find a date for a meeting 2x faster!

- **Each session is led by a Chair or a co-Chair and, ideally, include one Course Director and the item-writers**
A Productive EQUATE Session

Matching/mixing content expertise, experiences, and personalities!!
## Assessment:

### Post-EQUATE Successes

<table>
<thead>
<tr>
<th></th>
<th>(%) Item Adjusted</th>
<th>Num Items</th>
<th>All Answers Accepted</th>
<th>&gt;1 Answer Accepted</th>
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<tbody>
<tr>
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<td>Exam 1</td>
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<td>6</td>
<td>144</td>
<td>2</td>
<td>6</td>
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Assessment: **Additional Gains from EQUATE Process**

- Students’ appreciation of our commitment to their education
- A form of on-going faculty development
  - Many junior/new faculty rise to become excellent item-writers quickly
- Opportunity for curriculum content assessment to identify redundancy and gap
Assessment: Challenges?

- Time
- Time
- Time
- Keeping sense of humor and energy in the process
- The need of “die-hard” EQUATURES
Future: **Tasks and Opportunities**

- Coding items to Bloom’s taxonomy levels
- Balancing exam difficulty
- Aligning the assessment with competencies
- Designing cross-discipline items
To BE AN EQUATER

• What are the most common item flaws you see in your institution?

https://answergarden.ch/282899
A really nice, earnest, 26-year-old kindergarten teacher comes in because of a "hard knot" in her upper shoulder. Exam shows that she is quite tender over a firm, knotty area in her right upper trapezius. Pressure applied there causes pain that seems to radiate like a “shepherd’s crook” over her ear on the same side. She is anxious and sweaty when she comes in. She receives a trigger point injection. Anxiety and sweating resolve before she leaves. The “hard knot” that had been present previously is no longer present by the time she leaves. What is the correct diagnosis?

A. Myofascial trigger point
B. Tension headache
C. Cervical radiculopathy
D. Polymyalgia rheumatica
E. Polymyositis
A 26-year-old anxious and sweaty woman presents with a "hard knot" in her upper shoulder. Exam reveals tenderness over a firm, knotty area in her right upper trapezius. When pressure is applied to the area, pain radiates like a “shepherd’s crook” over her right ear. She receives a trigger point injection and her anxiety and sweatiness resolve before she leaves. What is the best diagnosis?

A. Cervical radiculopathy
B. Myofascial trigger point
C. Polymyalgia rheumatica
D. Polymyositis
E. Tension headache
MOST COMMON FLAWS OBSERVED

• Pseudo cases
• Punctuations
• Unfocused Items (answers)
• Unnecessary ancillary information
• Teaching in the stem
• Negative questions
• Non-competing distractors
• Flaws that favor test-wise candidates: long correct answer, grammatical cues, logical cues, convergence, overlapping numerical range