Beyond Content:
Evaluating Effects of Curricular Change

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UNM HSC HRCC#14-210
Format

• Setting the stage (10 min)
• Think Pair Share (15 min)
• Report out (15 min)

Objectives

1. Discuss the impact of curricular change on the cognitive and affective domains of student learning
2. Identify tools that can assess the impact of curricular change on the affective domain of learning
3. Outline strategies to evaluate impact of curricular change
Domains of Learning

- **Cognitive Knowledge**
  - Creation
  - Evaluation/Synthesis
  - Analysis
  - Application
  - Comprehension
  - Recollection
- **Affective Habits of Mind**
  - Values
  - Motivation
  - Attitudes
  - Stereotypes
  - Feelings
  - Awareness
- **Psychomotor Physical Skills**

Krathwohl, Bloom and Masia, 1964; Anderson, Krathwohl and Bloom 2001; Harrow, 1972
Study Objectives
Measure the impact of integrating anatomy on:

1. Content mastery
2. Student confidence levels
3. Metacognitive awareness
4. Professional identity formation and attitudes
1. Content Mastery

A 64 year-old man presented with progressive hearing loss and ringing in his right ear. He was diagnosed with a tumor of cranial nerve VIII (acoustic neuroma) where it exits the cranial fossa. Which of the signs or symptoms listed below could most likely occur in this patient?

2. Confidence Levels

How confident are you that you answered the previous question correctly?
On a scale from 1-5 (1 =not at all, 5=very confident)

HOW measured: validated MCQ and confidence ratings

Thank you Allen Veitch and Rob Langmead, Office of Assessment and Learning, UNM SOM
Cohort 2 (integrated anatomy) students start with lower confidence, but achieve similar mastery compared to Cohort 1 (anatomy block)
3. Metacognitive Awareness

**HOW measured:** Metacognitive Awareness Inventory

*Schraw, Gregory, & Rayne SD (1994)*
Metacognitive awareness was similar between cohorts

- Ask myself questions about the material before I begin
- Know how well I did after a test

<table>
<thead>
<tr>
<th>Knowledge Type</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural Knowledge</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Planning</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Information Management</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Evaluation</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Declarative Knowledge</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Debugging Strategies</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Conditional Knowledge</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Comprehensive Monitoring</td>
<td>80%</td>
<td>80%</td>
</tr>
</tbody>
</table>
4. Professional identity formation and attitude towards dissection

- Cohort 1: Anatomy Block
- Cohort 2: Anatomy Thread

- Block Evaluation & Focus Group
- Attitude Survey
- Follow up Assessment Comments
# Block Evaluation:
Anatomy dissection is perceived as beneficial

<table>
<thead>
<tr>
<th>5 point scale</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dissecting</strong> a cadaver helps me feel, act, and understand the role of a medical professional</td>
<td>91</td>
<td>80</td>
</tr>
</tbody>
</table>

**Free response**

<table>
<thead>
<tr>
<th></th>
<th>Cohort 1</th>
<th>Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anatomy Lab</strong> was the <em>most</em> useful portion of HSFD/MSCT</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td><strong>Anatomy Lab</strong> was the <em>least</em> useful portion of HSFD/MSCT</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

Students mentioning unprompted in %
Cohort 2 agreed less with statements about **working in teams, reflective practices, and professional identity formation**

**Attitudes Survey Prompt:**
The anatomy block.../The anatomy thread...

- ...changed my attitude towards the human body
- ...gave me a taste of my future work as a doctor & how to cope with workload.
- ...helped me to confront questions related to mortality
- ...prompted me to reflect on my actions and decisions
- ...helped me to be accountable and responsible
- ...taught me to stay concentrated & efficient under mental/physical stress
- ... helped me to consider needs of the group above my own.
- ...improved my ability to coordinate with others
- ...increased my respect for my group members

[Cohort 2] [Cohort 1]
Attitudes survey coded free response:

Focus group themes:

1. Learning Anatomy & Medical Practice
2. Reflection
3. Professional Identity Formation

1. Individual learning
2. Time spent on Anatomy & Dissection
3. Bimodal response on Professional Identity Formation
Follow-up Survey:

**How** did anatomy help you feel prepared for organ system blocks/clinical skills?

Themes identified in essay responses

- **Patients**: 32 (Cohort 1), 50 (Cohort 2)
- **Milestone**: 39 (Cohort 1), 17 (Cohort 2)
- **Self-monitoring**: 43 (Cohort 1), 8 (Cohort 2)
- **Learning Tool**: 25 (Cohort 1), 50 (Cohort 2)
- **Visualization**: 4 (Cohort 1), 33 (Cohort 2)
- **Context (content)**: 4 (Cohort 1), 8 (Cohort 2)
- **Vocabulary**: 4 (Cohort 1), 8 (Cohort 2)
- **Foundation**: 57 (Cohort 1), 45 (Cohort 2)
Study Objectives

Measure the impact of integrating anatomy on:

1. Content mastery: higher for cohort 2, but no difference in retention
2. Student confidence levels: higher gain for cohort 2
3. Metacognitive awareness: no difference
4. Professional identity formation and attitude: different perceptions about teamwork, reflective practices and PIF

Supported by the UNM SOM Scholarship in Education Allocation Committee (SEAC)
Small Groups
Work in Groups
On your sticky notes respond to:

1. Think of possible ways curricular change could influence student learning.

2. If your program has changed or is planning curricular change, what specific non-cognitive outcomes did or will you track?

   OR

   What not-cognitive outcomes may be informative to track in your current curriculum?

1. What tools are you aware of or would you like to have to measure these outcomes?
Report Out / Gallery walk
Affect may determine, direct and sustain what students do and learn.

- Values
- Motivation
- Attitudes
- Stereotypes
- Feelings
- Awareness

Affective Habits of Mind