Learning Theory, Developmental Stages, & Educational Outcomes Across the Continuum

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Learning Theory
Bloom’s Taxonomy

- Cognitive domain
  - Head / Knowing
- Affective domain
  - Heart / Feeling
- Psychomotor domain
  - Hands / Doing

[Bloom; 1956]
Four Orientations to Learning

- **Behaviorism**
  - Focuses on observable behavior

- **Cognitivism**
  - Includes what is occurring within the brain

- **Humanism**
  - Embraces personal growth and development

- **Social and Situational**
  - Embraces the importance of context

[Merriam and Caffarella; 1991 and 2001]
<table>
<thead>
<tr>
<th>Aspect</th>
<th>Behaviorist</th>
<th>Cognitivist</th>
<th>Humanist</th>
<th>Social and Situational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Process</td>
<td>Change in behavior</td>
<td>Internal mental process</td>
<td>A personal act to fulfill potential</td>
<td>Interaction in social contexts</td>
</tr>
<tr>
<td>Locus of Learning</td>
<td>External stimuli</td>
<td>Internal cognitive structuring</td>
<td>Affective and cognitive needs</td>
<td>Relationship between people and environment</td>
</tr>
<tr>
<td>Purpose of Education</td>
<td>Produce change in behavior</td>
<td>Develop capacity and skills to learn</td>
<td>Become self-actualized; autonomous</td>
<td>Participation in communities of practice</td>
</tr>
<tr>
<td>Educator Role</td>
<td>Arranges environment to elicit desired response</td>
<td>Structures content of learning activity</td>
<td>Facilitates development of whole person</td>
<td>Works to establish communities of practice</td>
</tr>
<tr>
<td>What is Used in Teaching</td>
<td>Behavioral objectives; desired competencies</td>
<td>Focus on cognitive development; learning &amp; memory as a function of age and biology</td>
<td>Cooperative determination of objectives, content, format, and evaluation</td>
<td>Socialization; social participation; association and conversation</td>
</tr>
<tr>
<td>Theme</td>
<td>Skill development and training</td>
<td>Learning how to learn</td>
<td>Self directed learning</td>
<td>Inclusion and participation</td>
</tr>
</tbody>
</table>

[Merriam and Caffarella; 1991 and 2001]
Exercise Number One
(Share/Pair)

- Turn to one of your neighbors and take 3 minutes to discuss the 4 orientations to learning
- Share which one (a) resonates the most and (b) resonates the least with your own internal compass; if possible, explain why
Two Theories of Learning

**Pedagogy**
- “K-12” Learners
- Dependent learners
- Learner’s experience is not important
- Subject centered
- External motivation

**Andragogy**
- “Adult” learners
- Self-directed learners
- Learner’s experience is a rich resource
- Task/problem centered
- Internal motivation

[Knowles, 1980]
Structuring of Information

Global Example

- Discrete parts
- Sequential

Analytical / Global Processing

Analytical Example

A. Analytical processing
   1. Discrete parts
   2. Sequential

B. Global processing
   1. Whole picture
   2. Simultaneous
Exercise Number Two
(Low Tech Audience Response)

Which of the previous examples did you find easier to assimilate the information?

- A) Global image
- B) Analytic outline
“How is more important than what”

- Alan Knox, PhD
Learning Pyramid

- Lecture: 10%
- Reading: 20%
- Audiovisual: 30%
- Discussion: 50%
- Practice doing: 75%
- Teach others: 90%

Source: National Training Laboratories, Bethel, Maine
A Plea for Active Learning

- Tell me, I will forget
- Ask me, I will remember
- Involve me, I will understand

- Chinese Proverb
Developmental Stages
Exercise Number Three
(Silent Reflection)

- Which one of the five roles of an educator (i.e., an instructor, coach, facilitator, supervisor, or mentor) do you think is the single most important to emphasize in the new curriculum?

- Why?
## Physician Stages of Learning

<table>
<thead>
<tr>
<th>Physician Learner</th>
<th>Creating Learning Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizes that there is an issue with performance</td>
<td></td>
</tr>
<tr>
<td>Takes ownership and accepts opportunity for improvement</td>
<td>Predisposing</td>
</tr>
<tr>
<td>Commits to learning</td>
<td></td>
</tr>
<tr>
<td>Tries out what is learned</td>
<td>Enabling</td>
</tr>
<tr>
<td>Incorporates what is learned where appropriate</td>
<td>Reinforcing</td>
</tr>
</tbody>
</table>

[Courtesy of Don Moore; 2012]
Educational Outcomes Across the Continuum
Following the ATS/IDSA Community Acquired Pneumonia Guidelines

30-day Mortality Rate

The Professional Practice Gap

“What is”

Actual Patient Care

GAP
Knowledge Skills Behavior

“What should be”

Optimal Care As Informed by

• Evidence-based Medicine
• Guidelines
• Key Opinion Leaders
• Clinical Research
A Question in Practice

Physician Performance

Physician Competence

In Practice

Data

Analysis

Synthesis

Judgment

Wisdom

Strategy

Knowledge

Regnier et al, JCEHP, Sept 2005
Mazmanian & Davis, JAMA Sept 2002

From Kopelow, M. 2005
A Question in Practice

Physician Performance

System Obstacles

Hands-on

Physician Competence

Interactive

Strategy

Data

Analysis

Synthesis

Information

Knowledge

Self assessment

Didactic

Reflection

Wisdom

Regnier et al, JCEHP, Sept 2005
Mazmanian & Davis, JAMA Sept 2002
FIGURE 1. Proposed interactions between a physician and his or her practice profile, self-assessment, external validation, and learning activities (eg, CME).

Maintenance of Licensure Implementation Group: A MOL Proposal Template
(FSMB, November 12, 2010)
Moore’s Evaluation Framework

1) Participation
2) Satisfaction
3a) Learning (declarative knowledge = knows)
3b) Learning (procedural knowledge = knows how)
4) Competence (shows how)
5) Performance (does)
6) Patient Health
7) Community Health

Some Assessment Methods

- Medical record review
- Chart stimulated recall
- Checklists
- Global ratings
- Standardized patients
- OSCEs
- Neuropsychiatric screen
- Script concordance test
- Clinical case simulation
- Site review

- Simulations & models
- Procedure or case logs
- 360 degree global ratings
- Portfolios
- MCQ examinations
- Oral examinations
- Patient surveys
- Bender Gestalt
- Searching the literature
- Analysis of EMR data
ACGME/ABMS Competencies

- Patient Care and Procedural Skills
- Medical Knowledge
- Practice Based Learning & Improvement
- Interpersonal and Communications Skills
- Professionalism
- Systems-based Practice
Theoretical Competency Report Card Summary, Program X

- Systems Based Practice
- Professionalism
- Patient Care
- Medical Knowledge
- Practice Based Learning And Improvement
- Communications

Key:
- National % at or above milestone
- 2 SD or more below National mean %
Six Dimensions of Quality

1. Safe
2. Timely
3. Effective
4. Efficient
5. Equitable
6. Patient-centered

[Source: IOM, Crossing the Quality Chasm (2001)]
"I think you should be more explicit here in step two."
Thank you!!