Promoting Active Effective Teaching

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Neither I nor any member of my family has a financial interests that would create a conflict of interest or restrict my independent judgment with regard to the content of this course.
Objectives

1. Explore instructional strategies that promote active learning.

2. Recognize your stance as it relates to how you chose to teach content.

3. Given several teaching examples, chose methods of active learning that could be integrated.

4. Articulate changes that you are willing to try and make to promote effective active learning.
In planning your teaching what do you prioritize first?

A. Selecting content or learning materials
B. Evaluating what students have learned
C. Writing clear and measurable objectives
D. Opportunities to check for student comprehension
How to Format Teaching

1. Introduction
2. State Objectives
3. Provide content/learning activities
4. Check for student understanding
5. Evaluate what students have learned
Views of how to teach/interact with content include the:

Fidelity approach, mutual adaptation, and enactment approach.
<table>
<thead>
<tr>
<th>Views of How to Teach Content</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fidelity approach</td>
<td>Follows the textbook or written resources without adaptation.</td>
</tr>
<tr>
<td>Mutual adaptation</td>
<td>Similar to fidelity approach but relies on selecting content and giving examples from professional practice.</td>
</tr>
<tr>
<td>Enactment approach</td>
<td>Content is jointly created/experienced and is an ongoing process of construction</td>
</tr>
</tbody>
</table>
Which approach to teach content do you primarily use?

A. Fidelity approach
B. Mutual adaptation
C. Enactment approach
<table>
<thead>
<tr>
<th>Factors impacting teaching styles</th>
<th>Conceptual definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning and content styles</td>
<td>Content style is student’s preference for tackling a whole new track of instructional content in parts or wholes, or in images -- unlike metacognitive strategies – a set of general skills students use to manage, direct, regulate their learning, plan, monitor and evaluate their understanding. Tends to be habitual and fixed but they are inextricably related.</td>
</tr>
<tr>
<td>Textbook</td>
<td>As embodiment of material to be learned, sufficiency to meet student needs, foster higher order thinking, lockstep approach, level of coverage.</td>
</tr>
<tr>
<td>Factors impacting teaching styles</td>
<td>Conceptual definitions</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Language</td>
<td>Degree to which textbook promotes cognitive understanding, pedagogically authentic usage and fluency.</td>
</tr>
<tr>
<td>Pragmatics</td>
<td>Addressing student need desire to see relevance</td>
</tr>
<tr>
<td>Schematics</td>
<td>Filling gaps in student missing knowledge, building on prior knowledge, adequacy, difficulty and substantiality. Promoting interest and active exploration.</td>
</tr>
<tr>
<td>Affective</td>
<td>Promoting motivation, presenting content in ways that promote student interest.</td>
</tr>
</tbody>
</table>
Think about It
FIGURE 6-2  The Interaction of Four Systems

How can student engagement be promoted during teaching?
Promoting Student Engagement: One Example

http://video.dental.ufl.edu/Mediasite/Play/d53749ecd6e342e689748a0f00ad5bcc1d
Participant Input #1

1. Write down one or two courses or content areas that you would like to make more engaging and active for your students.

2. Identify what challenges you foresee in making your teaching an active, student-centered process.
Approaches to Making Teaching Active
As you reflect on a single topic or course that you teach, in what % is active teaching utilized?

A. All lecture. No active learning.
B. < 25%
C. 26-50%
D. 51-74%
E. >75%
How to Interact with Your PowerPoint

http://www.youtube.com/watch?v=GTycnI0jMfI
Family of Teaching Models
Each family of models guides decisions about the role of instructor, student, use of resources/materials, and expectations for degree of student engagement versus instructor-directive teaching.
<table>
<thead>
<tr>
<th>Family Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Processing</td>
<td>Teaches how to organize data, build concepts, solve problems</td>
</tr>
<tr>
<td>Social</td>
<td>Promotes academic/social growth through group inquiry/collaboration</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Emphasizes mastery and self-correction</td>
</tr>
<tr>
<td>Personal</td>
<td>Fosters student growth as individuals; awareness of self and others</td>
</tr>
</tbody>
</table>
INFORMATION-PROCESSING FAMILY

• Enhances making sense of new information.

• Help students learn how to construct knowledge.
Example of Teaching using An Information Processing Model

Courtesy of Dr. Uma Nair

http://video.dental.ufl.edu/Mediasite/Play/aacd8d25df3845ddb79985afa8e0badc
SOCIAL FAMILY

- Uses group inquiry and problem-solving strategies.

- Encourages assimilation of new information and its application while relying on students’ personal and social values.
Portion of Reflective Writing Assignment

- Thinking back in time please consider and respond to each of the questions below.
## Reflective writing Rubric

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Nonreflective = 1</th>
<th>Introspective = 2</th>
<th>Adequately Reflective = 3</th>
<th>Critically reflective = 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Quality of Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td></td>
<td></td>
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<tr>
<td>C.</td>
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<tr>
<td>D.</td>
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<tr>
<td>E.</td>
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<tr>
<td>F.</td>
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</tbody>
</table>
• Develop student mastery in acquisition of particular skills or content.
• Seeks specific behavioral changes.
• Measurable outcomes.
An Example of Teaching using Behavioral Family of Models

- Developmental Defects of the Oral and Maxillofacial Region - Case 4, Courtesy of Dr. Don Cohen

- Patient: This 29 year old female was referred to Oral and Maxillofacial Surgery and Diagnostic Sciences at the University of Florida because of a large asymptomatic radiolucency in the anterior mandible (Figure 1).
Figure 1-Pan
Description of Case

- The lesion involved teeth #20-28. The patient denies any symptoms, swelling or pain. The clinical exam revealed no intraoral swelling or infection. Floor of the mouth was soft; no bony expansion was noted. The anterior buccal aspect of the mandible felt high and indurated (scar like). The patient did not have any trismus or tooth decay. Teeth were vital and not mobile.

- Review of systems - History of a soft tissue graft to the anterior mandible and a hip fracture. Patient is developmentally challenged and obese with hypertension. Current medications include Levora (an oral contraceptive agent). An incisional biopsy was done in the OR, submitted to the Head and Neck Section of General Pathology at Shands. Oral pathology consult from the UFCD Oral and Maxillofacial Pathology Biopsy Service was requested.
Figure 2-Histology
Based on the panorex findings and photomicrograph of the biopsy specimen pictured above and the medical history what is the most likely diagnosis?

A. Anterior Lingual Mandibular Salivary Gland Depression (Stafne Bone Defect)
B. Traumatic Bone Cyst (TBC)
C. Odontogenic Keratocyst (OKC)
D. Apical Periodontal Cyst (APC)
E. Central Giant Cell Granuloma (CGCG)
PERSONAL FAMILY

- Emphasizes self-actualizing, self-awareness, directing destinies.
- Exploration and reflection about goals or future careers.
One 4 DN student who has just completed the APGD Clinic has created her own portfolio of cases and literature reviews.
What are Models of Teaching?

- Drawn from formative education, these conceptual frameworks support learning and are grouped by purpose of teaching and intended outcomes.
- Provide guidance for:
  - Types of instructional activities
  - Levels of professor/student talk and cognitive complexity of learning activities,
  - Types of resources – cases, radiographs, tables.
Benefits of Using Teaching Models
Benefits to Instructor

- Improves the quality of instruction.
- Systematic approach to planning for instruction.
- Facilitates awareness about students’ learning needs.
- Provides opportunities to assess impact of instruction.
- Change ways of representing content/skills.
- Facilitates student engagement in more meaningful ways.
Student Benefits

- Increases aptitude for learning and retention.
- Learn more rapidly.
- Facilitates different kinds of learning.
- Builds academic self-esteem.
- Acknowledges characteristics and aptitudes.
- Promotes student awareness of how they will be taught and changes sought.
Caveats

Does not replace pedagogical expertise –

• Subject matter knowledge
• Creativity
• Interpersonal skills

• No model is effective for everyone
Which models of families do you primarily use?

A. Information Processing  
B. Social  
C. Behavioral  
D. Personal
Instructional Strategies for Active Teaching

- Link information to practice.
- Encourage application.
- Assess what students know.
- Acquire insight into students’ thinking skills.
Writing questions for textbooks and readings

• Write focus questions at the beginning of chapter or an article

• Develop discussion questions at the end of chapter or reading
Engaging Students Prior to Presentation

- Begin each lecture with a case-based vignette, or a radiograph.
- Prepare a set of questions to ask students.
- Come back to the vignette or radiograph periodically throughout your presentation.
### Practices that Promote Active Engagement

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<th>1. Background Knowledge Probe</th>
<th>4. Memory Matrix</th>
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<tbody>
<tr>
<td>2. Misconception/Preconception Check</td>
<td>5. Minute Paper</td>
</tr>
<tr>
<td>2. Muddiest Point</td>
<td>6. Application Cards</td>
</tr>
</tbody>
</table>
Background Knowledge Probe

1. Following presentation, write (or distribute) open-ended questions to students.

2. Ask students to respond to these questions individually or while working in pairs and to keep their responses to 2-3 sentences.
Misconception/Preconception Check

1. Talk with colleagues. Brainstorm about troublesome misconceptions/preconceptions that students bring to the lab, class or the clinic.

2. Create multiple-choice or short answer questionnaire to solicit students’ ideas or beliefs.

3. Have another faculty review the questionnaire before distributing it. Also think about how you will reply to the variety of student outcomes.

4. Remove questions that you feel unprepared to deal with

5. Explain when and how you plan to respond to students’ feedback.
1. Ask students to list three muddiest points regarding a lecture, procedure, or reading.

2. Students can read other students’ papers or responses to a case and point out the muddiest points.

3. Pass out cards to students. After clinic session or during lecture, ask them to write down 2-3 muddiest points. Ask a few students to tally and categorize the responses. Share results at next lab, clinic, or class.
Which answer choice below best represents why it is important that pre-doctoral dental students develop a personal understanding of how culture can impact oral healthcare delivery?

A. Ensure lucrative practice
B. Ensure you talk politely to all patients
C. Develop culturally appropriate Treatment Plans
D. Interview patients about their social interests.

![Image showing 0% for all options]
MEMORY MATRIX

- Create a worksheet or table with categories/fields of information to be covered.

- Students complete the worksheet. See next slide for example.
Example of Memory Matrix

- adapted from Dr. Mathew Dennis materials

<table>
<thead>
<tr>
<th>SYSTEMS</th>
<th>General Pathology</th>
<th>Dental Risk Assessment</th>
<th>Treatment Planning Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endocrine (liver, adrenal, thyroid)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head &amp; Neck Anatomy</td>
<td></td>
<td></td>
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</tbody>
</table>
Minute Paper

1. Ask students to summarize most important things they learned in class, lab, or clinic.

2. Ask students to write what important questions remain unanswered from learning experience in class, lab, or clinic.
1. Decide prior to lab, class, or clinic learning how many applications you want. Three to five minutes per each is sufficient.

2. Announce the process and distribute small index card.
Example of Application Card Exercise

- Across the US, dentists are moving towards the use of composites and away from amalgam in posterior restorations.
- Write two reasons for using composites for patients rather than amalgam.
- Write one reason why amalgam might be the preferred material in posterior restorations.
Application Cards

1. Assess the accuracy of applications, and provide individual feedback to students.

2. Grade each application using symbols such as: G = Great; A = Acceptable; M = Marginal; N = Not acceptable.

3. Share anonymous, but representative examples.

4. Solicit student evaluation regarding how an M, or N application can be improved.
1. Write down one or two courses or content areas that you would like to make more engaging and active for your students.

2. Identify what techniques you could see yourself trying to apply.

3. Develop an action plan with a timeline to incorporate these techniques.
Concluding Remarks and Questions