Developing Classroom Materials and Activities

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FSU Program for Instructional Excellence (PIE) Workshop
Developing Classroom Materials

Plan course

Engage and teach

Check learning

Assess the semester
Outline

- **Course Planning**
  - Course goals
  - Learning objectives
  - Deciding on materials
- **Engage and Teach**
  - Materials and activities
- **Check Learning**
  - Throughout the semester
  - Assessing exam questions
- **Creating Assignments**
- **Assessing the Semester**
Before your class starts...

Create Course Goals and Learning Objectives
Writing Course Goals

• Main themes or ideas for the course
• Broad/overarching goals
• The instructor’s goals for the course

Examples:

• Students will understand the basic concepts behind sports business
• This course will introduce students to music from the Baroque, Classical, and Romantic periods
• This course will help students learn how to design a safe and effective exercise program for a healthy adult
Writing measurable learning objectives

Start with clear direction

• Learning objectives

  o Statements which describe what the learner is expected to achieve as a result of instruction.

  o Guide teacher and Learner
    + Allow analysis of teaching and learning

  o Contain measurable verb
Writing measurable learning objectives

Examples:
• Students will be able to define Newton’s three laws of motion
• Students will be able to explain the effect of population size on environmental resources
• Students will be able to create an exercise plan to accomplish a client’s specific fitness goals.
## Course Goals

This course will teach students how to administer exercise testing protocols.

### Learning Objectives

<table>
<thead>
<tr>
<th>Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>List the procedures for each exercise test</td>
</tr>
<tr>
<td>Demonstrate how to perform each test</td>
</tr>
<tr>
<td>Explain and administer test to someone else</td>
</tr>
</tbody>
</table>
Think about...

- What kind of instructional activities will you use to achieve those outcomes?
- What kind of assessment tools will you use to assess those outcomes?
# Outcomes Matrix

<table>
<thead>
<tr>
<th>Course Goals</th>
<th>Learning Objectives</th>
<th>Instructional Activities</th>
<th>Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course will teach students how to administer exercise testing protocols</td>
<td>List the procedures for each exercise test</td>
<td>~Lecture ~Class notes ~Review games</td>
<td>~Exams ~Quizzes ~Case Study</td>
</tr>
<tr>
<td></td>
<td>Demonstrate how to perform each test</td>
<td>Practice in class – as a group and individually</td>
<td>Laboratory Practical</td>
</tr>
<tr>
<td></td>
<td>Explain and administer test to someone else</td>
<td>Complete a “skills” sheet that needs to be checked off by TA</td>
<td>Laboratory Practical</td>
</tr>
</tbody>
</table>

- **Reading Materials**
- **Syllabus**
- **Class materials**
- **Assessments**
Objectives of the readings should match goals and learning objectives of the course

Cost
  - 65% of students reported not buying a textbook due to high cost
  - 45% of students reported not registering for a course due to high cost

Consider the difficulty level of the textbook/readings for the course level
Choosing Reading Material

- Online version/Online tools?

[Bar chart showing the percentage of time students used different devices to read material, with the source indicated as a student survey with n ~5,388]
Choosing Reading Material

• Online version/Online tools?

• Length
  ◦ Rule of thumb: Multiply the number of pages by 5 minutes

• Supplement textbook with additional readings
Course Goals

Learning objectives
Expectations

Explain course materials
Explain usefulness of textbook
Explain the importance of the syllabus!

Assignments
Assessment
Course Calendar

IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

WWW.PHDCOMICS.COM
# Course Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Activity</th>
<th>Readings/Assignments</th>
</tr>
</thead>
</table>
| Lab 1            | Blood Pressure and Heart Rate | **Reading:** Lab Manual: Ch 3  
**Homework:** Blood pressure worksheet, *study for quiz* |
| Week of August 31st |              |                                                                                   |
| Lab 2            | EKG: Electrode Placement  
*Quiz 1* | **Reading:** EKG Book: Ch 1  
**Due:** Blood pressure worksheet, *study for quiz*  
**Homework:** Label EKG |
| Week of September 14th |              |                                                                                   |
| Lab 3            | EKG: Enlargement and hypertrophy  
*Quiz 2* | **Reading:** EKG Book: Ch 2  
**Due:** Labelled EKG  
**Homework:** Complete EKG questions |
| Week of September 21st |              |                                                                                   |

- Presentation style
- Online or outside materials
- Handouts
- In-class assignments/activities
- Group work
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<td></td>
<td>Reading: Lab Manual: Ch 3</td>
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<td></td>
<td></td>
<td>Homework: Blood pressure worksheet,</td>
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Student’s attention span lasts approximately 15 minutes (Burns, 1985)

Change it up every 15 minutes

~Power point
~Notes sheet
~BP worksheet
~BP cuffs, stopwatch

Lesson Plan Sheet
Engage and Teach

Diversify materials

Diverse materials enhance engagement and learning

- Although preferences exist, there is not strong evidence of learning styles (Paschler et al, 2008)

- There is evidence that multisensory information from multiple sources generally enhances learning (Farkas, 2003)
Engage and Teach

» Piquing interest
  • Case study
  • Current events

» Interspersed with material
  • Media
  • Humor
  • Classroom activities
Engage and Teach

» Classroom activities

> Chat Stations
> Snowball Discussion
> What has been your most successful experiment in student engagement?
> Think, Pair, Share

Other great activities at:
http://www.cultofpedagogy.com/speaking-listening-techniques/
Engage and Teach

» Piquing interest
  > Case study
  > Current events

» Interspersed with material
  > Media
  > Humor
  > Classroom activities
  > iClickers or other voting devices
  > Review questions
Check learning

» Even before reaching topic!
» In class
  > Not necessarily directed at individuals
» Self-checking
Check learning

Tests

**Difficulty** shows fraction of students with correct answer

+ Range of difficulty
+ But if difficult for *everyone*, could indicate weaknesses

**Discrimination Index** indicates degree to which highest scoring students excelled on this question

\[ DI = \frac{(a - b)}{n} \]

- **DI** - Discrimination Index
- **a** - Response frequency of the upper quartile
- **b** - Response frequency of the lower quartile
- **n** - Number of respondents in the upper quartile

<table>
<thead>
<tr>
<th>Item</th>
<th>Difficulty</th>
<th>Discrimination Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 17</td>
<td>0.549</td>
<td>0.308</td>
</tr>
<tr>
<td>Q 24</td>
<td>0.549</td>
<td>0.615</td>
</tr>
<tr>
<td>Q 12</td>
<td>0.569</td>
<td>0.192</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>( D ) Range</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( 0.40 \leq D \leq 1.00 )</td>
<td>Satisfactory discrimination</td>
</tr>
<tr>
<td>( 0.30 \leq D &lt; 0.40 )</td>
<td>Some revisions may be required to the item</td>
</tr>
<tr>
<td>( 0.20 \leq D &lt; 0.30 )</td>
<td>The item needs revision</td>
</tr>
<tr>
<td>(-1.00 \leq D &lt; 0.20 )</td>
<td>The item needs to be removed or completely revised</td>
</tr>
</tbody>
</table>
Developing Assignments/Assessments

• Reflects learning outcomes
• Determine difficulty and time required to complete
• Make weight consistent with effort
• Clearly communicate the purpose, expectations, and requirements
• Provide Rubric
# Sample Rubric

<table>
<thead>
<tr>
<th>Project Element</th>
<th>Less Effective</th>
<th>Somewhat Effective</th>
<th>More Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Stratification</td>
<td>Missing/incorrect risk factors listed, incorrect stratification, and lacks stratification justification (0 - 2 pts)</td>
<td>All cardiovascular risk factors are listed and client is stratified into the correct risk category (low, moderate, or high risk), but with 1 or 2 incorrect risk factor and/or stratification. Justification for the stratification is provided. <strong>OR:</strong> All risk factors and stratification is correct, but no justification is provided (3 - 6 pts)</td>
<td>All appropriate cardiovascular risk factors are listed and client is stratified into the correct risk category (low, moderate, or high risk). Justification for the stratification is provided. (7 - 10 pts)</td>
</tr>
<tr>
<td>Aerobic Program</td>
<td>Aerobic program is lacking 3 or more of the following: FITT principles, modifications for special considerations/special populations, progression, way for client to measure intensity. <strong>OR:</strong> 1 or 2 elements are missing, but the program is not aligned with client’s fitness level and goals (0 - 2 pts)</td>
<td>Appropriate aerobic program is created, but lacks one or two of the following: FITT principles, modifications for special considerations/special populations, progression, way for client to measure intensity. <strong>OR:</strong> All elements are included, but program is not aligned with client’s fitness level and goals (3 - 6 pts)</td>
<td>Appropriate aerobic program is created according to recommended frequency, intensity, time, and type (FITT principles) as well as modifications for special considerations and/or special populations. Appropriate progression principles are utilized. An appropriate way that the client can measure intensity is provided. (7 - 10 pts)</td>
</tr>
</tbody>
</table>
Assess the Semester

• Revise Test Bank
• Collect student feedback
• Ask for peer evaluation
• Identify strengths and weaknesses
  o What went well?
  o What did not go so well?
• Modify class plans
• Modify class materials
**Summary**

**Assess the semester**
- Revise test bank
- Collect student feedback

**Plan course**
- Outcome matrix as basis for course

**Check learning**
- Throughout learning process
- Using testing center feedback

**Engage and teach**
- Start with clear direction
- Diversify materials
PIE Facebook Page

https://www.facebook.com/fsupie/?ref=aymt_homepage_panel
One more important class material you may need...

It's on the syllabus.

Questions?