

How can you meaningfully self-assess your teaching in the midst of your busy schedule?

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Oregon Tech Commission on College Teaching Tech Talk

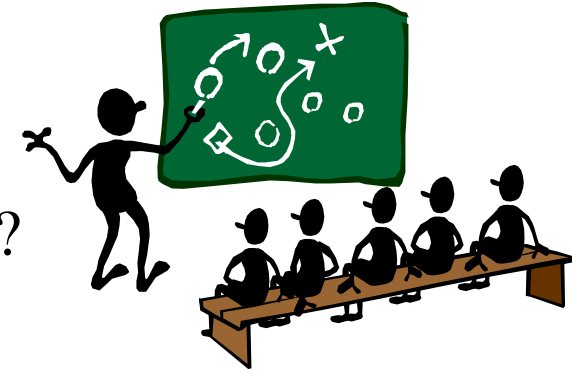
November 21, 2013

Learning Objectives

- Explain why self-assessment of teaching is beneficial
- Employ self-assessment of teaching as a means of continuous improvement
- Avoid that stale crusty old teacher thing that happens

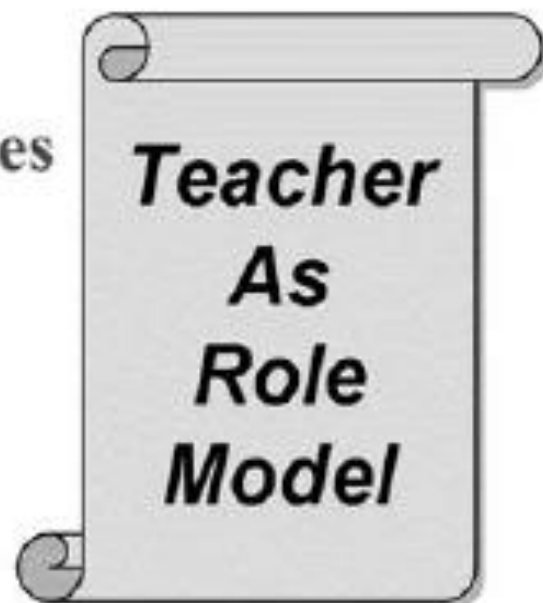
A Model Instructional Strategy

- ❑ Provide an orientation:
 - ❑ Why is this important?
 - ❑ How does it relate to prior knowledge?
- ❑ Provide learning objectives.
- ❑ Provide information.
- ❑ Stimulate critical thinking about the subject.
- ❑ Provide models.
- ❑ Provide opportunities to apply the knowledge:
 - ❑ In a familiar context.
 - ❑ In new and unfamiliar contexts.
- ❑ Assess the learners' performance and provide feedback.
- ❑ Provide opportunities for self-assessment.



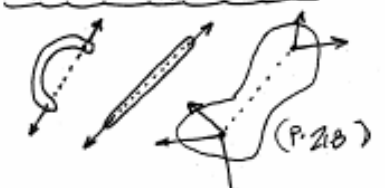
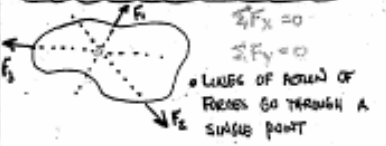
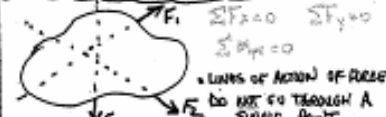
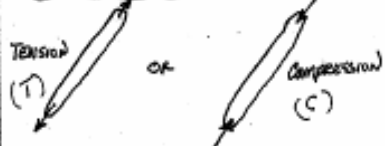
The “ExCEED Model”

- ◆ **Structured organization**
 - Based on learning objectives
 - Appropriate to the subject matter
 - Varied, to appeal to different learning styles
- ◆ **Engaging presentation**
 - Clear written and verbal communication
 - High degree of contact with students
 - Physical models & demonstrations
- ◆ **Enthusiasm**
- ◆ **Positive rapport with students**
- ◆ **Frequent assessment of student learning**
 - Classroom assessment techniques
 - Out-of-class homework and projects
- ◆ **Appropriate use of technology**



A Structured Methodology for Organizing a Class

- ❑ Formulate learning objectives.
- ❑ Develop *in-class* learning activities.
 - ❑ Prepare a lesson outline.
 - ❑ Prepare “board notes.”
- ❑ Develop *out-of-class* learning activities.
 - ❑ Select reading assignments.
 - ❑ Develop homework assignments and projects.

<p><u>LEARNING OBJECTIVES</u></p> <ul style="list-style-type: none"> ✓ DEFINE A TRUSS ✓ LIST THE ASSUMPTIONS NECESSARY TO DETERMINE INTERNAL FORCES IN A TRUSS ✓ SOLVE FOR INTERNAL FORCES IN TRUSS MEMBERS <p>• write report class</p> <p>• talk in classroom, esp. L, C Number</p> <p>• DONUT</p> <p>• BEAR, 200M, TRUSS</p>	<p><u>REVIEW</u> → 2-FORCE MEMBERS</p>  <p>(P. 218)</p> <ul style="list-style-type: none"> • SHAPE NOT A FORCE • FORCES APPLIED AT TWO POINTS ON A MEMBER • FORCES MUST BE: <ul style="list-style-type: none"> - EQUAL - OPPOSITE - COLLINEAR
<p><u>REVIEW - CONCURRENT FORCE SYSTEM</u></p>  <p>$\sum F_x = 0$ $\sum F_y = 0$</p> <ul style="list-style-type: none"> • LINES OF ACTION OF FORCES GO THROUGH A SINGLE POINT 	<p><u>TRUSS</u></p> <p>(STUDENT DRAWS A TRUSS)</p> <ul style="list-style-type: none"> • STRUCTURE • Slender members joined together at end points <p>~ USE BEARING TO BRING OUT TOUCHING POINTS</p>
<p><u>NON-CONCURRENT FORCE SYSTEM</u></p>  <p>$\sum F_x = 0$ $\sum F_y = 0$ $\sum M_A = 0$</p> <ul style="list-style-type: none"> • LINES OF ACTION OF FORCES DO NOT GO THROUGH A SINGLE POINT 	<p><u>CHARACTERISTICS OF A TRUSS</u></p>  <p>(1) Tension OR (2) Compression</p> <ul style="list-style-type: none"> • STRAIGHT SLENDER MEMBERS [BUILD FROM MEMBERS] • FORM TRIANGULAR SHAPES • CAPABLE OF: <ul style="list-style-type: none"> - HIGH LOAD - LONG SPANS • EXAMPLES: BRIDGE, ROOF, SPACE TRUSS
<p><u>ASSUMPTIONS (P. 254)</u></p> <ul style="list-style-type: none"> • LOADS APPLIED ONLY AT JOINTS • MEMBERS CONNECTED BY FRICTIONLESS PINS • ALL TRUSS ELEMENTS ARE 2-FORCE MEMBERS • MEMBER WEIGHT NEGLECTABLE <p>AREA SAME?</p>	<p>Building From At Area</p> <p>1 member 2 member 3 member 4 member 5 member 6 member 7 member 8 member 9 member 10 member 11 member 12 member 13 member 14 member 15 member 16 member 17 member 18 member 19 member 20 member 21 member 22 member 23 member 24 member 25 member 26 member 27 member 28 member 29 member 30 member 31 member 32 member 33 member 34 member 35 member 36 member 37 member 38 member 39 member 40 member 41 member 42 member 43 member 44 member 45 member 46 member 47 member 48 member 49 member 50 member 51 member 52 member 53 member 54 member 55 member 56 member 57 member 58 member 59 member 60 member 61 member 62 member 63 member 64 member 65 member 66 member 67 member 68 member 69 member 70 member 71 member 72 member 73 member 74 member 75 member 76 member 77 member 78 member 79 member 80 member 81 member 82 member 83 member 84 member 85 member 86 member 87 member 88 member 89 member 90 member 91 member 92 member 93 member 94 member 95 member 96 member 97 member 98 member 99 member 100 member</p>

ME301 BOARD NOTES

SIMPLE COMPRESSIBLE SYSTEM
PURE SUBSTANCE (USUALLY IN A CLOSED SYSTEM) WHERE ONLY WORK IS BOUNDARY WORK

STATE PRINCIPLE
THE STATE OF A SIMPLE COMPRESSIBLE SYSTEM CAN BE FIXED BY TWO INDEPENDENT, INTENSIVE PROPERTIES

EXAMPLES

- $P \neq M$
- $T \neq h$
- $P \neq T \rightarrow$ ONLY IF SINGLE PHASE

STEAM TABLES [A-2, A-3, A-4]
RELATE TEMPERATURE & PRESSURE FOR STEAM (LIQUID & VAPOR)

SATURATION QUANTITIES
POINT AT WHICH PHASE CHANGE MAY OCCUR

[TBL A-2] GIVEN TEMP $\rightarrow T = 100^\circ\text{C}$

$P_{\text{sat}} = P_{\text{sat}} = 1.014 \text{ bar} = 101.4 \text{ kPa}$

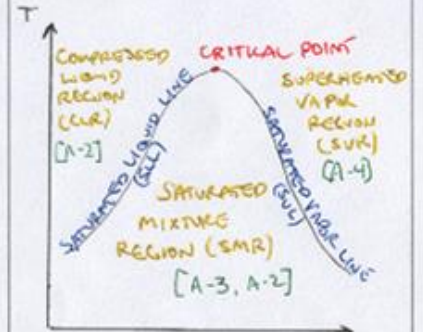
[TBL A-3] GIVEN PRESS $\rightarrow P = 0.9 \text{ bar}$

$T_{\text{boil}} = T_{\text{sat}} = 96.71^\circ\text{C}$

H_2O BOILING POINT \rightarrow T AND P DEPENDENT

LESSON: 13 page: 3

VAPOR DOME



T & P ARE NOT INDEPENDENT IN SMR

- BOILING CURVE IN DENVER (TAKES LONGER TO COOK)

- PRESSURE COOKER \uparrow P GREATER ENERGY TRANSFER

* VACUUM BOILING DEMO

- DEW POINT & DENV

Notes

Teaching Assessment Worksheet

TEACHING ASSESSMENT WORKSHEET

INSTRUCTOR: _____ ASSESSED BY: _____

LESSON TOPIC: _____ DATE: _____

STRENGTHS:

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AREAS FOR IMPROVEMENT:

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	Needs Work	Good	Excellent	Remarks
TECHNICAL EXPERTISE				
Command of the Subject Matter				
LESSON ORGANIZATION				
Lesson Objectives				
Organization of Boards & Classroom Activities				
CONDUCT OF THE CLASS				
Enthusiasm, Energy, and Confidence				
Orientation to the Subject Matter				
Clarity of Presentation (<i>boards, viewgraphs, etc.</i>)				
Clarity & Precision of Explanations				
Voice (<i>volume, speed, variation</i>)				
Questioning & Answering Questions				
Contact with Students				
Visual Aids and Demonstrations				
Time Management				
Appropriate Use of Textbook				
THE CLASSROOM ENVIRONMENT				
Classroom Appearance				
OVERALL ASSESSMENT:				
Are the students who attended this class adequately prepared to accomplish the Lesson Objectives? <input type="checkbox"/> No <input type="checkbox"/> Not sure <input type="checkbox"/> Yes				

Specific areas on which to focus during your next class:

- _____
- _____
- _____

TEACHING ASSESSMENT WORKSHEET

INSTRUCTOR: Sybil N. Jineer

ASSESSED BY: B. Positive

LESSON TOPIC: Free Body Diagram

DATE: _____

STRENGTHS:

1	Good intro - emphasized importance of FBD
2	• Good use of text for diagrams of supports
3	"Reaction = restraint against translation or rotation"
4	✓ GOOD PRECISION!
5	Excellent physical examples. (Rollerblades?)
6	Generally good questioning, but see (21) below.
7	Small group activity - well timed well executed.
8	Use of chainsaw to isolate the 'Free body' was
9	eye-opening - good for visual learners.
10	Overall, good demo, but it ran a bit too long.
11	Good use of objectives for <u>CONCLUSION</u> .
12	

AREAS FOR IMPROVEMENT:

AREAS FOR IMPROVEMENT:

- | | |
|----|--|
| 13 | Board #1 - could have drawn more of this from students. |
| 14 | Connect the FBD to The 5-Step Problem-Solving Process ("Draw |
| 15 | a Picture.") |
| 16 | You used "pin" & "hinge" interchangeably. Are they the same? |
| 17 | Question about cable supports was ambiguous. |
| 18 | Watch frequent use of "he" & "guys" - exclusionary language. |
| 19 | Don't confuse "support" (physical object) and "reaction" |
| 20 | (force or moment) |
| 21 | Too many "jump ball" questions. |
| 22 | The acetylene torch was a bit much. I'm surprised |
| 23 | you didn't set off the smoke detectors. |
| 24 | |

	Needs Work	Good	Excellent	Remarks
TECHNICAL EXPERTISE				
Command of the Subject Matter		✓		
LESSON ORGANIZATION				
Lesson Objectives			✓	11
Organization of Boards & Classroom Activities			✓	Nice flow!
CONDUCT OF THE CLASS				
Enthusiasm, Energy, and Confidence			✓	
Orientation to the Subject Matter			✓	
Clarity of Presentation (boards, viewgraphs, etc.)		✓		
Clarity & Precision of Explanations		✓		16, 19
Voice (volume, speed, variation)			✓	
Questioning & Answering Questions		✓		6, 21
Contact with Students			✓	very engaging.
Visual Aids and Demonstrations			✓	8, 10, 22
Time Management		✓		10
Appropriate Use of Textbook			✓	2
THE CLASSROOM ENVIRONMENT				
Classroom Appearance				
OVERALL ASSESSMENT:				
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Specific areas on which to focus during your next class:

1. Work on precision in use of terminology.
2. Use more directed Questions; fewer "jump balls"
3. Find an alternative to "guys" in referring to students.

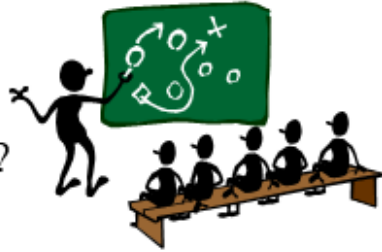
Now you try...

- Complete an assessment of the presentation you just saw
- Allow C.J. to prepare his own self-assessment
- These activities serve purposes in the ExCEED teaching model:
 - Stimulate critical thinking
 - Serve as a model for students
 - Provides an opportunity to apply knowledge in a familiar context
 - Create positive rapport (you're doing what they're doing)
 - Employ a classroom assessment technique

Remember the models

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*Teacher
As
Role
Model*

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