Teaching in Virtual Environments
APRU Global Health Program at the University of Southern California
in collaboration with
Global STEM Education Program at the University of Oregon

May 5, 6-7:30pm US Pacific
May 6, 9-10:30am Hong Kong
Connecting Classroom Teaching to the Real World
Eleanor Vandegrift, University of Oregon &
Adik Wibowo, University of Indonesia

May 19, 6-7:30 pm US Pacific
May 20 9-10:30am Hong Kong
Developing Learners’ Practical Skills in Remote Classrooms
Eleanor Vandegrift, University of Oregon &
Yotsawee Saifah, Chulalongkorn University

June 2, 6-7:30pm US Pacific
June 3, 9-10:30am Hong Kong
Reflections on a Year of Virtual Teaching
Eleanor Vandegrift,, University of Oregon &
Mellissa Withers, University of Southern California

More info or to register: apru.org/our-work/pacific-rim-challenges/global-health
Welcome and Introduction

Mellissa Withers, University of Southern California
Goals for Today

1. Provide pedagogical, technology, and peer support to faculty across the APRU network teaching remotely.

2. Create opportunities for APRU affiliated faculty to connect and share resources and experiences
Format

30 MINUTES EXPERT PANEL

30 MINUTES SMALL GROUP DISCUSSION

30 LARGE GROUP DISCUSSION
Interactions Today

Zoom Chat

Think and make a note for yourself

Zoom Polling

A.  
B.  
C.

Breakout Rooms

Using Video and Audio
Chat: What type of practical skills do you want students to learn?
Classroom applications

Elly Vandegrift,
University of Oregon
Chat: What skills are essential for students to learn in college?
Learning Priorities from Employers

Very Important* Skills for Recent College Graduates We Are Hiring

<table>
<thead>
<tr>
<th>Skill</th>
<th>Business executives</th>
<th>Hiring managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicate orally</td>
<td>85% in 2014</td>
<td>80% 90%</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>81% in 2014</td>
<td>78% 84%</td>
</tr>
<tr>
<td>Ethical judgment</td>
<td>81% in 2014</td>
<td>77% 87%</td>
</tr>
<tr>
<td>Teamwork</td>
<td>83% in 2014</td>
<td>77% 87%</td>
</tr>
<tr>
<td>Work independently</td>
<td></td>
<td>77% 85%</td>
</tr>
<tr>
<td>Initiate ideas and solutions</td>
<td></td>
<td>76% 85%</td>
</tr>
<tr>
<td>Communicate in writing</td>
<td>82% in 2014</td>
<td>76% 78%</td>
</tr>
<tr>
<td>Real-world settings</td>
<td>80% in 2014</td>
<td>76% 87%</td>
</tr>
</tbody>
</table>

* 8-10 ratings on a 0-to-10 scale; 15 outcomes tested

Zoom poll: Which of these are hardest for students to learn?
Which Essential Skills are Hardest to Hire?

Source: Committee for Economic Development
Which Essential Skills are Hardest to Hire?

Source: Committee for Economic Development
Example Class activity to practice critical thinking and problem solving
Do cells phones cause cancer?

WHO: Cell phone use can increase possible cancer risk

(CNN) -- Radiation from cell phones can possibly cause cancer, according to the World Health Organization. The agency now lists mobile phone use in the same "carcinogenic hazard" category as lead, engine exhaust and chloroform.

May 11, 2011

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Do cells phones cause cancer?

WHO: Cell phone use can increase possible cancer risk

Conclusion:

Modest increase in Glimoa cancer in high cell phone use group

Do cells phones cause cancer?


Do cell phones cause cancer?

Do cell phones cause cancer?

Conclusion:

360,000 cell phone users in Denmark. No increase in cancer for people who owned and used cell phones for longer.

Do cells phones cause cancer?

**WHO: Cell phone use can increase possible cancer risk**

(CNN) -- Radiation from cell phones can possibly cause cancer, according to the World Health Organization. The agency now lists mobile phone use in the same "carcinogenic hazard" category as lead, engine exhaust and chloroform.

May 11, 2011

**No Cellphone-Cancer Link in Large Study**

By TARA PARKER-POPE

What is the link between cellphones and cancer?

A major study of nearly 360,000 cellphone users in Denmark found no increased risk of brain tumors with long-term use.

October 20, 2011
Why is this a controversy?

A. The media likes stirring up controversy, we actually know that cell phones do not cause cancer.

B. Cell phones are known to cause cancer, but the cell phone companies don’t want you to know.

C. Most studies are based on correlations, and the studies have reported conflicting findings.
What would you like to know to solve this scientific controversy?
With your group, design a possible experiment to test if cell phones cause cancer.
Representative student answers

“2 groups of mice: exposed cell phones or not.”

“Tape cell phones to 100 people’s heads and measure radiation for 30 days.”

“Measure radiation levels from different phones.”
Do cell phones cause cancer?

The New York Times

Study of Cellphone Risks Finds
‘Some Evidence’ of Link to Cancer, at Least in Male Rats

Many caveats apply, and the results involve radio frequencies long out of routine use.

Rodents were exposed to radiation at 900 megahertz, a frequency typical of the second generation of cellphones that prevailed in the 1990s, when the study was first conceived. Michael Nagle/Bloomberg

By William J. Broad

Nov. 1, 2018

**This article has been retracted.**

Retraction in: *Exp Ther Med. 2021 May; 21(5): 472*  
See also: [PMC Retraction Policy](#)

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**Exposure to radiofrequency radiation increases the risk of breast cancer: A systematic review and meta-analysis**

*Ya-Wen Shih,*¹ *Anthony Paul O'Brien,*² *Chin-Sheng Hung,*³,⁴ *Kee-Hsin Chen,*⁵,⁶,⁷,⁷ *Wen-Hsuan Hou,*⁸,⁹,¹⁰,¹¹ and *Hsiu-Ting Tsaι¹,⁵

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This article has been retracted. See *Exp Ther Med. 2021 May; 21(5): 472.*
Domains of Learning

Yotsawee Saifah, Chulalongkorn University
Developing Learners' Practical Skills in Remote Classrooms

YOTSAWEE SAIFAH, PHD
Chulalongkorn University
**Cognitive Domain**
- Reading & Writing
- Problem Solving
- Calculating
- Selective Attention
- Presenting Information
- Critical Thinking
- Listening & Speaking Mandarin

**Affective Domain**
- Resilient
- Making Friends
- Collaborative Working
- Emotional management

**Psychomotor Domain**
- Driving a Car
- Skateboarding
- Operating a Machine
- Playing an Instrument
Learners’ learning could be categorized into THREE types of domains....

- **Cognitive Domain**: Knowledge and all intellectual behaviors and required thinking skills.
  - What to Teach: Sharing information and encouraging students to think methodologically.
  - How to Teach: Encouraging students to think methodologically.

- **Affective Domain**: Expression of feelings and acceptance of attitudes, opinions or values.
  - What to Teach: Leading student to more interact with peers or role-model.
  - How to Teach: Leading student to more interact with peers or role-model.

- **Psychomotor Domain**: Acquired skills that integrate mental and muscular activity.
  - What to Teach: Leading student to practice and learn through experiential learning.
  - How to Teach: Leading student to practice and learn through experiential learning.

Key: Choose the right (teaching) strategy to teach your students a particular domain of learning!
Naturalization
High level of performance achieved with actions becoming second nature.

Articulation
Several skills can be performed together in a harmonious way.

Precision
Performance becomes more exact, and action are more precise.

Manipulation
Actions performed through memorization or following directions.

Imitation
Learns by watching and imitating actions.
Six Steps of Teaching a Practical Skills to Learners

1. Preparation
2. Knowledge Dissemination
3. Demonstration
4. Practice
5. Presentation
6. Evaluation and Reflection

Key to Success
= Teacher-Student Interaction

Source: Sripratumrak, Tomkham & Sriprasart (In Press)
As a learner, how do you feel after finishing the first activity?
Activity 2

Source: https://www.youtube.com/watch?v=Ys9t5lgmkII
As a learner, how do you feel after finishing the first activity?
Do you feel different during the second activity from the first one?
Why?
Six Steps of Teaching a Practical Skills to Learners

1. Preparation
2. Knowledge Dissemination
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6. Evaluation and Reflection

Source: Sripratumrak, Tomkham & Sriprasart (In Press)
How to Evaluate Learners’ Performance of Practical Skill(s)

Key: Using Assessment with **Scoring Rubric**

Sample Assessing “Singing Performance” with Analytic Rubric

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Superior</th>
<th>Excellent</th>
<th>Very Good</th>
<th>Average</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Virtually no errors. Pitch is very accurate.</td>
<td>An occasional isolated error, but most of the time pitch is accurate and secure.</td>
<td>Some accurate pitches, but there are frequent and/or repeated errors.</td>
<td>Very few accurate or secure pitches.</td>
<td>Who needs pitch?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rhythm</th>
<th>Superior</th>
<th>Excellent</th>
<th>Very Good</th>
<th>Average</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The beat is secure and the rhythms are accurate for the music being sung.</td>
<td>The beat is secure and the rhythms are mostly accurate. There are a few duration errors, but these do not detract from the overall performance.</td>
<td>The beat is somewhat erratic. Some rhythms are accurate. Frequent or repeated duration errors. Rhythm problems occasionally detract from the overall performance.</td>
<td>The beat is usually erratic and rhythms are seldom accurate, detracting significantly from the overall performance.</td>
<td>Ain’t got no rhythm.</td>
</tr>
</tbody>
</table>
How to Evaluate Learners’ Performance of Practical Skill(s)

Key: Using Assessment with Scoring Rubric

Assessing “Singing Performance” with Holistic Rubric

<table>
<thead>
<tr>
<th>To receive a score of:</th>
<th>The student:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (least skilled performance)</td>
<td>sings the song with no thought about breathing, tone quality, or posture; is unable to maintain his/her part; does not respond to the cues of the conductor; makes numerous memorization mistakes; talks often during the performance; sings without a steady beat.</td>
</tr>
<tr>
<td>2</td>
<td>sings with 4-6 mistakes; poor enthusiasm and concentration; talks occasionally during the performance.</td>
</tr>
<tr>
<td>3</td>
<td>sings with 2-3 mistakes; fair enthusiasm and concentration.</td>
</tr>
<tr>
<td>4</td>
<td>sings song with 1 or fewer mistakes in memory, part maintenance, vocal tone, posture, breathing, blend, concentration, expressiveness, etc.; demonstrates concentration and interest while singing.</td>
</tr>
<tr>
<td>5 (most skilled performance)</td>
<td>sings song, maintaining own part, using proper breathing techniques and a pleasing tone, with and without accompaniment, memorized, with appropriate expressive and stylistic devices and stage presence, blending vocal timbres, matching dynamic levels, singing with correct posture, excellent concentration and interest, and responding to the conductor as part of a group.</td>
</tr>
</tbody>
</table>

Breakout Room
Introduce yourselves (Name + Institution)

Select a Facilitator, Time Keeper

1. How do you already help students develop practical skills in your courses?
2. Think about the “do cell phones cause cancer” class activity, what similar types of scenarios could you include in your classes? How did this activity allow you to practice with the 3 domains (cognitive, affective, and psychomotor)?
3. How do (or could use) you use the 3 domains (cognitive, affective, and psychomotor) of learning in your courses?
1. What’s one idea from today you want to use into your courses?
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