



**Getting Ready To Teach Science Courses with Laboratory Classes in the New Normal**



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**Outline of the Day**

- Introduction
- Teaching experiences during the pandemic
- Getting ready for the new normal
- Break
- Designing home experiments in science classes
- Open Forum/Dialogue



**Academic Journey**

**Coronavirus Pandemic Timeline**

DEC 2019  
 WHO reports pneumonia of unknown origin in Wuhan City, China

JAN 2020  
 First cases in Wuhan, China  
 WHO declares it a public health emergency

FEB 7, 2020  
 Chinese media first to warn about the virus, dies from COVID-19

FEB 29, 2020  
 US reports its first COVID-19 death

MAR 11, 2020  
 WHO reports more than 1 million cases worldwide

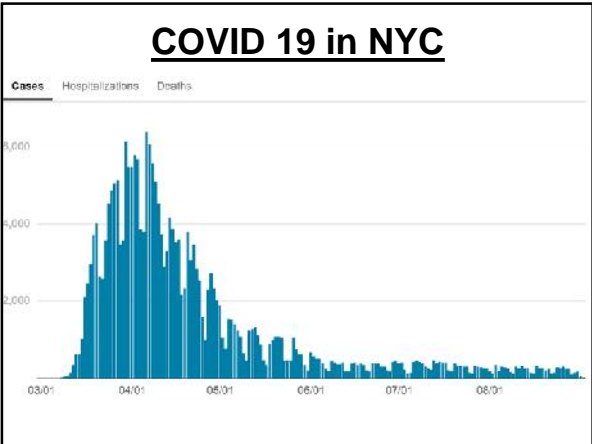
MAR 23, 2020  
 WHO declares COVID-19 a global pandemic

MAY 2020  
 After a week with almost no new cases, China announces that Wuhan lockdown will be partially lifted. April 8th Tokyo Olympics and Paralympics postponed until 2021.

**I'VE GOT A BAD FEELING ABOUT THIS**

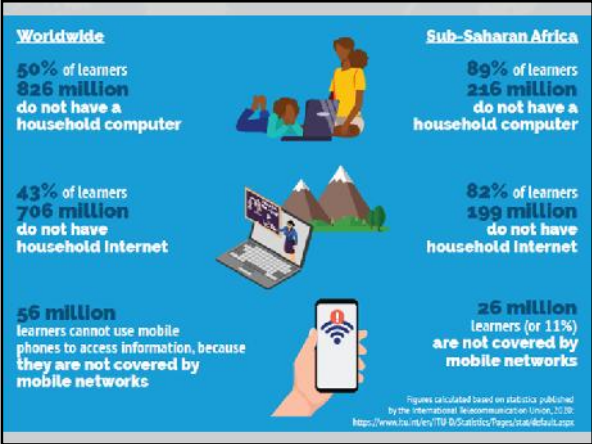
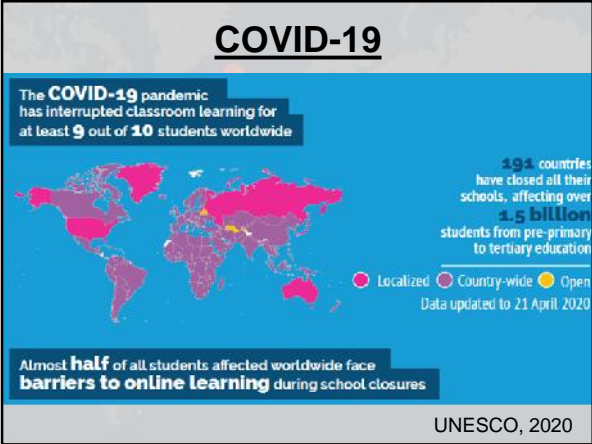
### Questions Pondered

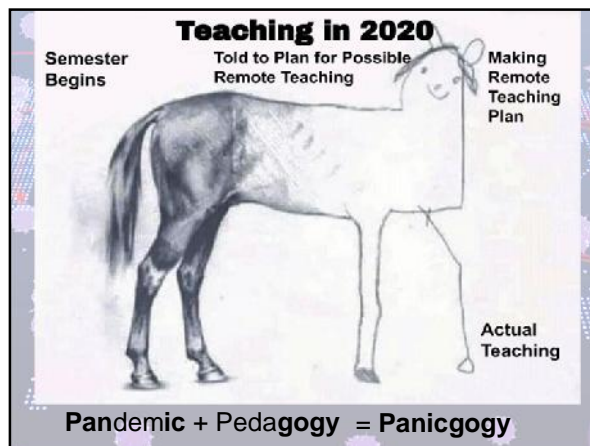
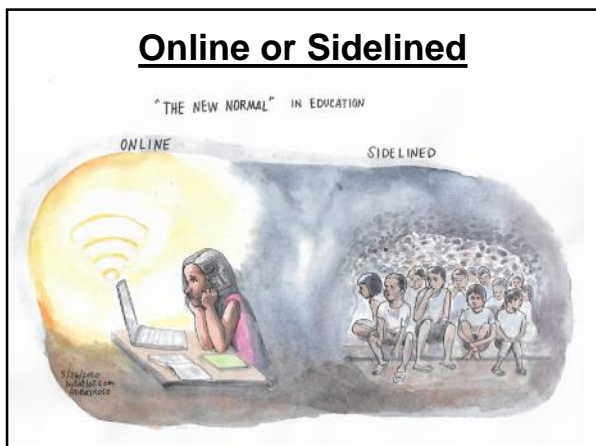
- How are we going to transition during the middle of semester?
- How can we maintain the same engagement we have in face to face environment once we go online?
- Are we ready for this mode of teaching?
- How will students react to this mode of teaching?
- How are we going to do the laboratory class?



### NYC Covid 19

<b>Cases</b>	231,068
<b>Hospitalizations</b>	57,189
<b>Confirmed deaths*</b> Deaths following a positive COVID-19 laboratory test	19,066
<b>Probable deaths</b> Cause of death reported as "COVID-19" or equivalent, but no positive laboratory test	4,644
<i>Updated:</i>	<i>September 3, at 1 p.m.</i>

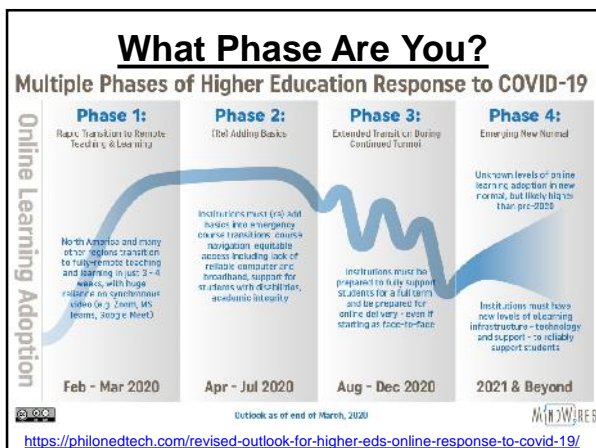
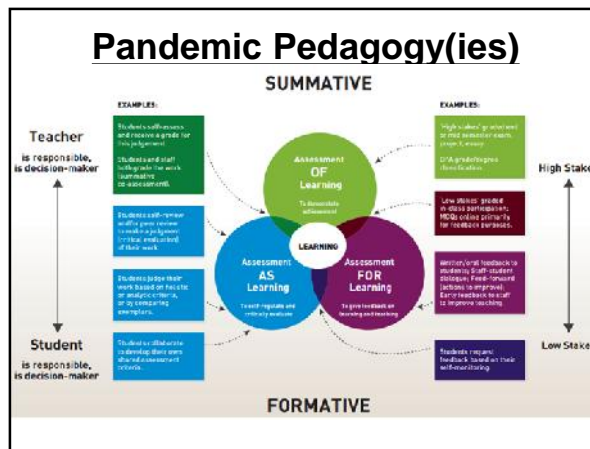




### Transition to New Normal

- Shift of learning space
- Shift of delivery
- Shift of responsibility in the teaching and learning process
- Shift in learning evaluations

<https://www.thestar.com.my/opinion/letters/2020/04/28/transitioning-to-the-new-normal-in-education>



### Spring and Summer 2020

**PACE UNIVERSITY**

Spring 2020  
 Gen Chem I lecture T-R  
 Gen Chem II lab W  
 Instrumental Method lab M  
 Summer 2020  
 Gen Chem I lecture & lab

**YORK College**

Spring 2020  
 Gen Chem II lecture S  
 Instr Method F  
 Summer 2020  
 Instrumental Methods

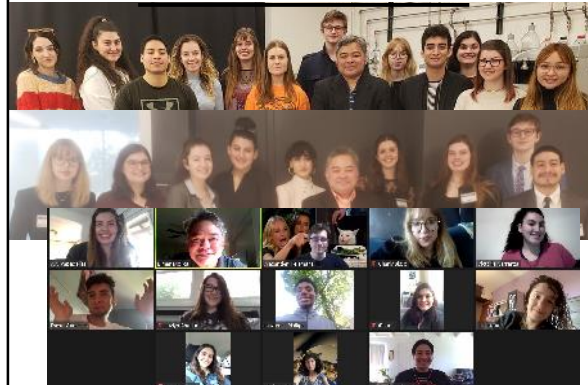
## Class Transition



- Suspended research activities
- Lecture transition is easier
- Laboratory a little bit challenging



## Research Activities



## Research Activities

- All physical research activities were suspended since classes were suspended.
- Cancelled some of our presentations (ACS in Philadelphia).
- Three students were able to finish their thesis.
- At present, computational calculations and processing of data are the main focus of our research.

## Lecture Class

- Zoom vs Blackboard
- Held synchronous class
- Recorded sessions are made available
- Posted recorded short slides for problem solving.
- Met in Zoom for office hour.
- The challenge is how to make them more engage during class.



## Teacher's Poem During Pandemic



I will teach you in a room.  
 I will teach you now on Zoom.  
 I will teach you in your house.  
 I will teach you with a mouse.  
 I will teach you here and there.  
 I will teach you because I care.  
 So just do your very best.  
 And do not worry about the rest.

## Lecture Class Problems

- Not all are attending classes
- Assessment
- Chegging
  - All questions in test banks are available online.
  - Exam score inflation (57 to 82 then 60 and 62).
- Respondus Lockdown



**Chegg®**

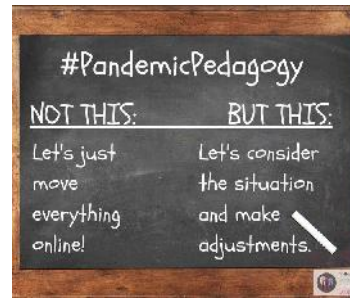
### Laboratory Class Options

Options for Laboratory Classes

- did not do labs
- virtual labs
- simulations
- used videos related to experiments
- home-based experiments

Objective is to make laboratory useful to reinforce the concepts discussed in lecture.

### Pandemic Pedadogy



<https://eileencampbellreed.org/2020/05/04/pandemic-pedagogy/>

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### New Normal



**ADOPTION OF VARIOUS LEARNING DELIVERY IN EDUCATION**

- FACE TO FACE**  
WHERE LIMITED NUMBER OF LEARNERS GO TO SCHOOL
- HOME SCHOOL / STUDY**  
PROVIDES LEARNERS WITH EQUAL ACCESS TO QUALITY BASIC EDUCATION AT HOME TO BE FACILITATED BY QUALIFIED PARENTS, GUARDIANS, OR TEACHERS
- DISTANCE LEARNING**  
THIS IS DELIVERED THROUGH DIFFERENT MODES IN ONLINE PLATFORM OR EDUCATIONAL PROGRAMS BY TV AND RADIO (CORPORATE MODELS)
- BLENDED LEARNING**  
THIS ALLOWS FOR A COMBINATION OF FACE TO FACE, ONLINE, AND MODULAR LEARNING DELIVERY


**EDUCATION MUST CONTINUE!**

**Buy to the Mode of Teaching**


**FLEXIBLE LEARNING**

## Embrace the Mode of Teaching

- modular, online, face to face or blended



*Spring 2020*  
 Gen Chem I lecture T-R  
 Gen Chem II lab W  
 Instrumental Method lab M  
*Summer 2020*  
 Gen Chem I lecture & lab



*Spring 2020*  
 Gen Chem II lecture S  
 Instr Method F  
*Summer 2020*  
 Instrumental Methods

## Remote/Distance vs Online

Prof. Jason Wrench, SUNY New Paltz  
 Online Learning vs. Remote Learning

	Online Learning	Remote Learning
Intent	Planned	Emergent, Crisis
Development Timeline	1 to 2 Years Prior	ASAP, Immediately
Instructional Development	Intentional & Guided	Haphazard & Emergent
Focus	Online Andragogy	Academic Attainment
Trainer Focus	Content and Andragogy	Content and Delivery
Andragogical Focus	Best Practices for Online	Best Practices for Crisis
Learner Focus	Engagement & Attainment	Attainment

<https://www.td.org/user/content/jasonwrench/online-learning-vs-remote-learning-04-22-20-03-50>

## Choose the LMS to be used

  
 Blackboard

  
 DESIRE2LEARN

  
 canvas

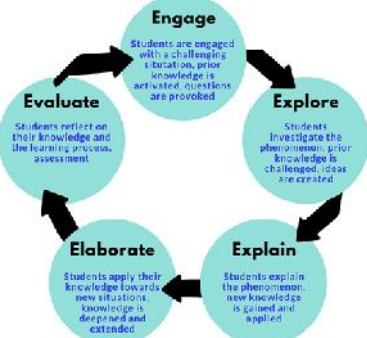
  
 Google Meet

  
 Microsoft Teams

  
 moodle

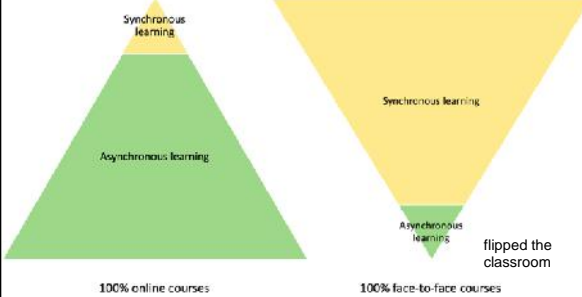
  
 brightspace

## Modules (BSCS 5E)



<https://knowledgequest.aasl.org/the-5-es-of-inquiry-based-learning/>





## Synchronous vs Asynchronous



<https://educationrickshaw.com/2020/03/30/the-unproductive-debate-of-synchronous-vs-asynchronous-learning/>

## Synchronous vs Asynchronous

- Most students prefer the synchronous
- Use of modules would mean asynchronous
- Tap social media for synchronous activities if LMS is not available

## Synchronous vs Asynchronous

- Synchronous - class held as scheduled



- Asynchronous
  - recording session of the class
  - additional materials were posted

<https://educationrickshaw.com/2020/03/30/the-unproductive-debate-of-synchronous-vs-asynchronous-learning/>

## Assessment

- How are you going to assess your students?
- In most sciences, best way for assessment is exams
- Formative assessment over summative assessment

## Connect With Students

- Establish connection with your students as early as possible.

"Great teachers focus not on compliance, but on connections and relationships."

- PJ Caposey in Education Week Teacher

## Connecting with Students

### Survey shows BuSU students prefer print instead of online lessons

By: **Carmela Reyes-Escupe** - Correspondent / @InquireeDotNet | Inquirer Central Luzon / 02:21 PM August 13, 2020

CITY OF MALOLOS – Bulacan's top university has conducted a survey to find out if its 38,000 students prefer printed lessons, online classroom sessions, or a fusion of the two modes of home learning for the new school year which starts on Sept. 14.

The survey is still ongoing, but initial results suggest that many students of the Bulacan State University (BuSU) prefer studying using print materials because of concerns that they will not afford internet connections for the whole semester, or reside in areas with poor internet connectivity, said Joseph Roy Celestino, BuSU Vice Chancellor for Student Affairs.



## Ask for Help

- Chemistry faculty unite



Strategies for teaching chemistry online

Private group · 3.1K members



About Discussion Announcements Topics Members Events Media Files

## We Are All Together (Bayanihan)

- Explain to them why we have this present set-up.

Coming together  
is a beginning;  
keeping together  
is progress;  
working together  
is success

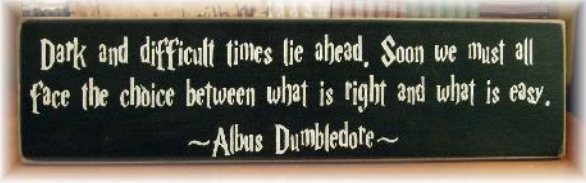
HENRY FORD

A problem  
shared is a  
problem solved

When 'I' replaced with 'We', even the  
illness becomes wellness.

— Malcolm X —

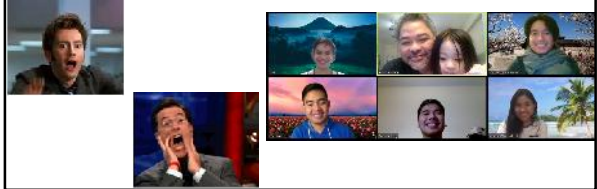
### Tough and Difficult Times



**Tough times don't last, tough people do.**

### By the End of Semester

- Felt "stressed out" (most stressful semester)
- Felt helpless (constant fear)
- All efforts are worthwhile after reading student evaluations



### Constant Communication

- Stay in contact with your students by giving feedbacks to their inputs.

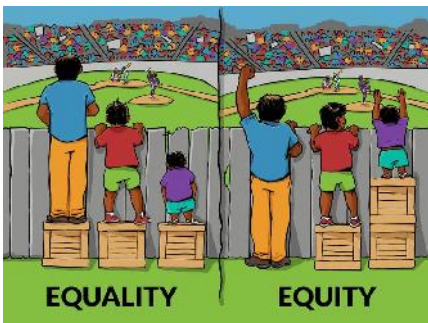
A good relationship requires two constants: **constant communication** and **constant sacrifice.**



### Practice Empathy

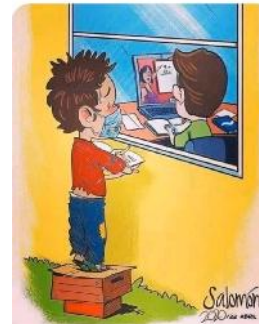
**Empathy is...**  
seeing with the eyes of another,  
listening with the ears of another,  
and feeling with the heart of another.

### Practice Equity



### Practice Equity

Remember not every student has the same opportunity.





### Take Home Message

- There is no easy solution to our current set-up.
- Student goals will take center stage.
- Find positives in the current situation.
- Plan, plan, plan.
- Alternatives to high stakes assessments.
- Mental issue is a real thing.

### Advise with Beatles Songs

Do You Want To Know A Secret? | I Should Have Known Better  
In My Life | Yesterday | Here, There and Everywhere | Chains  
Long, Long, Long | Long and Winding Road | From Me to You  
Get Back | Carry That Weight | I Am So Tired | It's All Too Much  
A Hard Day's Night | Eight Days A Week | Don't Let Me Down  
You Never Give Me Your Money | I Want To Tell You  
With A Little Help From My Friends | We Can Work It Out  
All Together Now | No Reply | Misery | Let It Be | Wait | Help!  
All You Need Is Love | Come Together | Getting Better | The End

*The love you take is equal to the love you make*