The moral dilemma of going back: How the pandemic changed my teaching

Lección Inaugural, 2022
Universidad del Valle de Guatemala
28 de enero 2022
The moral dilemma of going back:
How the pandemic changed my teaching

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Peer instruction leads to higher learning gains and better retention.
March 2020

before (and just after) pandemic
Team based

1. before (and just after) pandemic
before (and just after) pandemic
Intrinsic motivation

before (and just after) pandemic
before (and just after) pandemic
before (and just after) pandemic
blend of 6 scaffolded “best practices”

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC: Learning Catalytics</td>
<td>90 min</td>
<td>Instructor poses question, Answer alone, Discuss in team, Answer again</td>
</tr>
<tr>
<td>Tutorial</td>
<td>60 min</td>
<td>Work on worksheet with team, Explore concepts, Discuss with staff</td>
</tr>
<tr>
<td>EA: Estimation Activity</td>
<td>30 min</td>
<td>Estimate quantities, Develop individual strategy, Discuss and solve as team</td>
</tr>
<tr>
<td>EDA: Experimental Design Activity</td>
<td>90 min</td>
<td>Conduct experiment with team, Take measurements, Analyze data, Carry out simulations</td>
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<tr>
<td>Problem Set &amp; Reflection</td>
<td>90 min</td>
<td>Work problems alone BEFORE class, Discuss with team, mark up, Self-assess &amp; turn in</td>
</tr>
<tr>
<td>RAA: Readiness Assurance Activity</td>
<td>90 min</td>
<td>Part 1: solve problems alone, Part 2: solve with team</td>
</tr>
</tbody>
</table>

before (and just after) pandemic
before (and just after) pandemic

bit.ly/ap50class
March 13, 2020

before (and just after) pandemic
instructional continuity between first and second half?

1 before (and just after) pandemic
86% agreed

Instructional continuity between first and second half?

Before (and just after) pandemic
Moving online

“How can I transfer online what I do in the classroom?”
Moving online

“How can I transfer online what I do in the classroom?”
(challenge)
Moving online

“How can I transfer online what I do in the classroom?”
(challenge)
Moving online

“How can I transfer online what I do in the classroom?”
(challenge)

“What can I do online that I cannot do in the classroom?”
(opportunity)
Changes implemented

- Minimize sync/instructor-paced
- Personalize instruction
Minimize sync/instructor-paced

synchronous \leftrightarrow asynchronous
Minimize sync/instructor-paced

synchronous

asynchronous

everybody together at the same *time*
Minimize sync/instructor-paced

synchronous ↔ instructor-paced

asynchronous ↔ self-paced
Minimize sync/instructor-paced

synchronous <-> asynchronous

instructor-paced <-> self-paced

everybody together at the same pace
Minimize sync/instructor-paced

lecture

synchronous ↔ asynchronous

instructor-paced ↔ self-paced
Minimize sync/instructor-paced

recorded lecture

synchronous <-> asynchronous

instructor-paced <-> self-paced
Minimize sync/instructor-paced

recorded lecture

synchronous ↔ asynchronous

instructor-paced ↔ self-paced

1.5x!
Minimize sync/instructor-paced
Minimize sync/instructor-paced

homework/study

synchronous $\leftrightarrow$ asynchronous

instructor-paced $\leftrightarrow$ self-paced
Minimize sync/instructor-paced
Minimize sync/instructor-paced

synchronous → asynchronous
instructor-paced → self-paced

reimagining course
Minimize sync/instructor-paced

synchronous $\rightarrow$ asynchronous

instructor-paced $\rightarrow$ self-paced

more time to help students where it really matters!

reimagining course
Personalize instruction

instead of all students coming to instructor’s room...
Personalize instruction

instead of all students coming to instructor’s room...

...instructional staff visits each team’s own room

2 reimagining course
Personalize instruction

80 students in one room → 20 rooms with 4 students

reimagining course
Personalize instruction
every student on front row

Oliver Mook
Eric Mazur
Cora Novak
Jill Smith
Sara Paul

reimagining course
Changes implemented

• Minimize sync/instructor-paced
• Personalize instruction
• Specifications Grading
Fall Content Learning Gain

FCI

gain (%)

in person  remote

3 results
Spring Content Learning Gain

CSEM

<table>
<thead>
<tr>
<th></th>
<th>in person</th>
<th>remote</th>
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</thead>
<tbody>
<tr>
<td>gain (%)</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
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Self Efficacy

belief in ability to succeed in a certain domain
Doubling of

• content learning gains
• physics self-efficacy gains

Research Shows Students Falling Months Behind During Virus Disruptions

The abrupt switch to remote learning wiped out academic gains for many students in America, and widened racial and economic gaps. Catching up in the fall won’t be easy.
Improved

• sense of growth and autonomy
• sense of support and community
• course evaluation
I did my best teaching ever remotely!

Research Shows Students Falling Months Behind During Virus Disruptions

The abrupt switch to remote learning wiped out academic gains for many students in America, and widened racial and economic gaps. Catching up in the fall won’t be easy.
I did my best teaching ever remotely!

So, now what?
Building together
Revert back?
(Post?) Pandemic changes

- Minimize sync/instructor-paced
- Personalize instruction
- Specifications Grading
(Post?) Pandemic changes

Sections -- in person or online (same experience, either way!)

You and your team can decide not only when, but also how to participate in the regular weekly class meetings for APSO. You can meet with your team and the TFS and me in the classroom (Pierce Hall 301), during one of the two section times. Alternatively, you can meet with us via Zoom, ideally during those same time slots.

In person: You and your teammates will be seated around a table in Pierce Hall 301 and share your work with each other using Zoom. Members of the teaching staff will check in with you at the table. (Note: Unlike in the picture, face coverings are mandatory in the classroom.)

Online: You and your teammates will meet in your team's Zoom meeting room and communicate and share your work with each other using Zoom. Members of the teaching staff will check in with you at your team's Zoom room.

No matter how you participate, the experience will be the same, as we carry out all class activities on the same platforms in person and online. On Zoom, your team will meet in its own Zoom room and share your work with each other via Zoom. In the in-person classroom your team will be seated at a table and also use Zoom to share work. By default, each team member or camera--or microphone--you can just talk to each other. In both cases, whenever your team is ready to have its work validated by the teaching team (or faculty), you will visit your Zoom room or come to your table in person. (Note: Face coverings are mandatory for all in-person meetings, see below for additional details).

You don't need to commit to in-person or online in advance, and you can switch back and forth as you please, provided the entire team agrees to participate at the same time and in the same modality for a given activity (all in-person or all online). To facilitate that process, we will ask you for your preferences before we form teams and match you with people who have similar preferences.

Multimodal approach

Sections -- Logistics

If you participate in person, meet me in Pierce Hall 301. If you participate online, begin your section by going to the APSO Teaching Team Room on Zoom. All
in-person vs. remote

prefer in-person (%)

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in-person vs. remote

prefer in-person (%)

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in-person attendance
“breaking down classroom walls”
Yuval Noah Harari: the world after coronavirus

This storm will pass. But the choices we make now could change our lives for years to come.

Yuval Noah Harari MARCH 20 2020

Humankind is now facing a global crisis. Perhaps the biggest crisis of our creation. The decisions people and governments take in the next few weeks and months will shape not just our current narrative but the narrative of the years to come. They will shape not just our future, but the future of our future generations. We must act.
Many short-term emergency measures will become a fixture of life. That is the nature of emergencies. They fast-forward historical processes. Decisions that in normal times could take years of deliberation are passed in a matter of hours. Immature and even dangerous technologies are pressed into service, because the risks of doing nothing are bigger. Entire countries serve as guinea-pigs in large-scale social experiments. What happens when everybody works from home and communicates only at a distance? What happens when entire schools and universities go online? In normal times, governments, businesses and educational boards would never agree to conduct such experiments. But these aren’t normal times.
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Remote teaching may well become a fixture of life.
for a copy of this presentation:

mazur.harvard.edu

course Canvas page:  bit.ly/eric_s_course

Follow me!  @eric_mazur