

Online COVID-19 High School Curriculum - Solon et al. Supplement 6. Partial Transcripts.

Partial Transcripts of semi-structured interviews (lightly edited for clarity and grammar).

Teacher Participants

- A. Suburban Massachusetts school (freshmen and sophomores). College Genetics and Molecular Biology (Undergrad).
- B. Urban California Health Sciences school (juniors)
- C. Urban Massachusetts school (juniors and seniors)
- D. Urban Texas school (seniors)

Thoughts on the module in general

A. I do have to say that this entire [module] is more engaging than some of my other units because it's high interest. I was just having students starting to come in the building when I was doing it and I had students who I had never spoken to because they never logged in and they had opinions about this.

C. I'm sick of what I'm doing in biology! No one wants to learn about evolution and ecology right now. This is in the forefront of people's minds this is just cool, so maybe I just do this with everybody that would be cool.

B. I will just say that I'm definitely gonna use it again. I think that it was just it was a brilliant curriculum. With us being back in the classroom next year it'll probably even be easier, just in the sense that I'll be able to have the students there and I can have them working on it and checking in on them. It's so nice in the way that it is student led so that I can work with other students at the same time. Yeah it's beautiful! I mean I've said this a million times but it's a really beautiful curriculum; you guys did an amazing job with it.

A. I feel any work that you all put into these lessons are great but it's always a matter of if it aligns with the standards- NGSS or Massachusetts standards. Some teachers really teach right to those standards and some go a little bit off, but when you align to the standards it's like a gold mine. So it's great because [the curriculum] works perfectly with that. You literally could list the ones because they're right there so it was great.

What parts of the curriculum were most engaging for students? Which lessons? Which lesson elements?

B. I had several students make comments about how they really felt like at the very beginning addressing the disparities in health care and the unequal distribution of cases among people, you know, people of color, it absolutely grabbed everybody's attention and I think it really sparked a lot of feelings in these students. I think it made it feel very genuine; it was very timely especially in our population of students. I think that first and foremost it was just such a good way to start the year, you know. I think it brought up a lot of feelings, good, bad, other but just feelings in general and I think it again it just made the critical

skills seem very genuine. I definitely like that aspect, I think just the ability to talk about with authority the thing that is affecting these kids' lives right now, in this moment.

A. I think that the thing that they found most engaging were activities where they were able to relate to the content, where it related to them, where it was personal stories about other people that they could then talk about. It wasn't something where I was prying or asking them, but I learned a lot about my students as a result of this. It was a perfect curriculum actually for the beginning of the year, and I wish I just started the year off with this in the sense that I felt like students really opened up about who they were and what they were going through in their lives and what their families had gone through and when they read about other people in one of those early lessons, they had just a really high level of engagement. I mean not that I'm expecting them to necessarily do that, and they don't have to, but I thought that that was a really wonderful thing to get to know your students.

C. One girl [said] 'Thank you for challenging us with really complicated ideas about what we're going through right now and for really taking the time to actually teach us this stuff because it's real and it's happening to us now. And especially to address things like health and disparities and systemic racism, bias in healthcare and all of that'. It just felt very genuine to them and I appreciated having a tool to start those conversations, especially as a white woman teacher who's coming from a place of... I mean I don't have this background, but I want to have these genuine conversations because I'm totally on board with everything that's going on today. Talking about these things in classes is essential to value our students and to show them that they matter, but I get very nervous about saying the wrong thing and then offending anyone. So I think that this curriculum really gave me the ability to start those conversations and to show the kids that I care enough to bring this into the classroom. They appreciated that it was done in a very genuine and I think very thoughtful way too.

C. I had another student of Asian descent who stopped afterwards and said 'I just wanted to let you know 'I walk around [] and I'm scared. I'm literally being tackled and people are screaming China flu! China flu! at me and I don't feel safe'. We had this whole conversation and I was realizing my privilege here. I've never a day in my life walked outside and been heckled [like that]. Anyways we had the potential to spark a lot of really genuine conversation but maybe a warning to teachers beforehand to have a conversation about you can share, but you don't have to share and being sensitive. Everybody has a story and you have no idea who's had it or hasn't and I was teaching students who literally lost people in their families and one student lost their caretaker who took care of him, several uncles, family members. It was very wrong to be sitting here talking about this from a very clinical point of view.

D. The introductory unit. They loved reading about the stories about how people were impacted and the cultural impact. That's a great way to get the engagement in the beginning. I mean these are a great group of kids, they liked going to those sites and seeing it. They're seniors and so government is a required class and by this point they already had economics. Nearly all of them I thought were engaged; I think when we got into stuff that's not really science-y they got a little lost because they don't expect to do that as much, or maybe they felt like they didn't have the background, I don't know. I wanted to keep going through all the material, but I can see in a large group you probably wouldn't want to go through all of it in sequence, I mean you all put a lot of sections in there but continuously opening up and going to the next one, but I wanted to see how they reacted to all of it. I'm retiring next week so I wanted to have it. I have shared it

with the patho team and the man that will take my place. I'm putting it in here for him to use because I know they're always looking for different things to do.

B. Lesson 2.4, also again I love this unit. They talked a lot about some of the infectious disease principles and minimal infectious dose. Kids were able to really see how that related to what's going on with them right now. I [also] really liked the asymptomatic case study in this one.

Did you pick and choose lessons for particular grades? Or let students go through all the material?

A. I used your full mutation [unit] with my college students. That was a group that could handle it. I said I know this seems a little like kiddish in terms of the check-ins, but then I know that you're home paying attention. They were OK with that. I mean the college students really love the topic. We were in genetics and they had talked so much about the genetics behind it, but not where is it coming from. Really forcing the amino acid sequences was an application of genetics that was perfect. But with my high school kids I really had to pare it back. I ended up doing the transcription and translation question first and that worked perfect as a review of the concept. The lessons were structured great, it's just a lot of detail and it was challenging to pick out what I wanted. I mean I love it, I just love learning about it so I didn't mind but it did take a little bit of time to go through and figure out what they already, what they potentially could understand and maybe where I wanted them to go.

C. One unit [2] was really hard. First, tracking zoonosis across the species barrier, with all of the amino acid sequences. My kids and myself were like, that is way up there. I did it but I felt like I was teaching something that I didn't feel very comfortable with. You know I probably should have called you guys up to explain this to me, but I was able to sort it out. I did the tracking clades lesson too. Oh my God, again really cool but just really complicated. I felt like some of these lessons were really good for my 9th graders and some were almost way above college level even for AP kids. *So did you skip over the clades lesson?* No, we did it! But I definitely needed to slow it down. I had to take your notes and put them in my own words and make my own slide decks and kind of explain it really slowly. So lesson 2.3, how SARS can be transmitted between people, we did the whole thing right after the clades lesson. Super fun and the kids were like 'Whoa OK! All the stuff I don't get and then, OK I can get this!

How did you use the curriculum? What kind of adjustments did you make to fit them in your classes, if any?

B. I have a set of students who are the gifted students that did really well with it, and another set of students that either haven't retained information from their other classes or just haven't been exposed to it, but I definitely found myself repeating a lot of information to them and giving them little mini quizzes on it just trying to refresh their memory.

B. I think the only the only thing I ended up doing at one point was I had students talk to me about how they felt that the background for the slides is a bit dark, I think because I had so many students that were they were sitting in dark rooms - they were in closets or in bathrooms or not in the happiest places so I did alter the background for the slides but that was the only thing that I did yeah everything else was perfect.

C. I used it pretty much in its entirety, I changed formatting just to put things in different colors in different fonts making them bigger and moving things around. It was very nice to be able to have a deck that I could then manipulate.

C. I made a copy of the outline and I put links on the outline and I basically told them these are all the links for you to use for the week - this one is going to be in class I'm going to go through it with you, this was going to be homework this was homework and then they would go use it. They could go ahead if they wanted to but at the end the product that they turned in basically had to give me 5 important points, what was the five takeaways. That worked out well.

C. I would like a better way I think to assess them even if it's just saying do they do it or not. If we can build in some way of definitely did they do it or not. You added in those assessment questions for a do now or end of class. I'd make them a lot of times exit passes and then I would use them on the quizzes that I created.

D. I liked they could respond anonymously. It made it more likely that they would respond if they couldn't be called out. I mean these five, we're pretty comfortable with each other, but in a larger group we can encourage students to stick your neck out and say something if it wasn't going to be identified with.

Did you use the lessons asynchronously? If so, was there anything about the curriculum that made asynchronous learning better or worse?

D. There were times when we would run out of time in class and I wanted the students to finish up with that particular lesson and it enabled me to have them finish things up without hassle. I did have some students who worked on the lesson from start to finish on their own just because of the fact that the lessons were very easy for the students to follow even if they were doing them on their own. I think the only times where they ran into trouble or when they got to difficult concepts like the case fatality ratio where it would be good for me to sort of demonstrate some of that stuff so that they could see what it is. I was able to as I learned what the students were getting caught up on or hung up on in the class, and with each class I got a little bit better at gauging that and making those adjustments for the other classes but it was something there I didn't know right away with what they would had difficulty with.

B. The students think it's very intuitive and really did seem to engage with it, but this was in the beginning of the year, early enough that the students were still kind of excited about doing something where they were interacting with one another and talking to each other, and this was something where it was very interactive.

A. I'm teaching freshmen and sophomores and the two groups are combined because we're switching over to biology freshman year. I have honors level and I have college prep. Definitely for the majority of my students I need to do things synchronously. Pear Deck was great because if a student was absent I could say here's the pear deck, work on it.

C. It was hard to know which ones I wanted to do asynchronously. I found that getting class in general to go through 20 slides was about what I could get to in class while having students interact, so we would do

one of those in class and then I would assign them one that was easier for them to go through [asynchronously] and add recap at the beginning of the next [lesson]. Not knowing what to expect made asynchronous learning worse. Just because I hadn't seen the curriculum or done it before. There was one point when it was going to be a complicated week because I was going to miss half of my classes so I basically made an outline. I said OK everybody here's the week's work these are all asynchronous. I'm going to see one class once and another class three times and when you come to class this week I can help you but these are all asynchronous'. When I looked through it I thought sure they can do that, then it wasn't something they could do on their own, and I think they felt very overwhelmed. I think I ended up extending it for like 2 weeks almost 2 1/2 week's worth of stuff that I thought I was going to get done in a week. I definitely underestimated the time they would take.

A. No. I think it could've worked, we just we don't have asynchronous learning here we were required to be in person. There were some school districts that did everything online but I don't know how much it was asynchronous

D. I like that you don't have to modify anything. I know you had all that stuff at the beginning about how you could do it, but really you can do it as is, so I just picked certain modules that I decided were more in depth than we wanted to go for this particular course at this point. I think it would be particularly helpful for the teacher next year; I've had the luxury of having them two separate periods this year but she's going to have to get independent work to work study students, so this kind of thing would actually be really fabulous. Yeah it definitely would be great.

What are your thoughts about the Pear Deck format?

C. Pear Deck in general - it's awesome when you have a perfect Internet connection, a perfectly fast computer, but otherwise for many of my students it was just clunky and so I felt bad sometimes like I would assign a deck and 5 minutes some kids were still waiting for their computer to think about it, so sometimes I would just take the Google doc and alter it and just have the kids answer in the chat window, or make a Jamboard that's like sticky notes so everybody's idea pops up. Of course, Pear Deck has its benefits so you can see what each individual student's doing and you can make comments but it's very clunky.

B. I really loved Pear Deck which was a really pleasant surprise because I wasn't familiar with it going into this process, but it ended up being something that the students really engaged with and I love the fact that I could switch back and forth between student led and instructor led was instantaneous. I also liked the fact that there were times when we would run out of time in class and I wanted the students to finish up with that particular lesson and it just enabled me to have them finish things up without hassle.

A. Pear deck was great for the social emotional stuff - where are you at in your understanding? Labeling pictures, moving things around - the kids love that - and bouncing between things so they're not always typing. They can just move a dot over the true answer and the virus question, I was just looking at it again how big a virus? So that's freshman and sophomores and I told you I used the mutation stuff at the college

level. I mean I think our AP bio teacher could have done the same thing, and she could have probably used the higher level stuff.

C. I learned my lesson because some kids would just get on Pear Deck and literally do nothing, they wouldn't interact with the site at all and other students would write a huge elaborate thing. It was also helpful to leave the Pear Deck open so students could always go back and click on the link and look to see what they wrote because if I closed it then they can't see what they wrote. Takeaways lets each student get a Google doc with their answers and everything. I tried that once- it nearly broke my computer.

What are your thoughts about the format where each section has different numbers of slides in it and therefore takes differing amounts of time? Other teachers said it helped learning and they could work around it.

B. It didn't bother me given the way that our classes are set up and the different students that I have in different classes. I have some students that are really gifted and then other students that are not and so between those classes the pace was different. I felt like this curriculum definitely flowed smoother and moved faster than the GD curriculum for me.

A. It wasn't a big deal because I put them all together. I think if someone was trying to plan out they might not have seen it like that but I had already combined them so I knew I always only had five slides or 10 slides. Each of your lessons had multiple sections in there so obviously they're already separated, so you could pick and choose what you want to; that might be a good way to go.

C. It definitely helps to have that outline so you could judge. I'm looking at one that is 15 [slides] and so that would be something for example that I would definitely very easily be able to get through at a class period or that would be a very small homework assignment. The ones that are 30 slides, those are pretty hefty and there's practically no way I could make it through even in my hour long lesson. 30 slides, so on those days I'm assuming you would just continue on the next day if you need more time. Usually what I would do is I would start the slideshow in class, or sorry start the Pear Deck, and do it synchronously, and then I would turn it over to them and make the rest of it homework so they have to go through the rest of it. If this was the homework that I gave them that night they basically had to submit their notes from class because I'm not going back in and looking at the Pear Deck.

D. You could work around it. Because I was going through it with my seniors and I wasn't expecting them to take notes and to be tested or quizzed over it so sometimes I could do two or three it just meant we had to log in multiple times but it was a small enough group and attentive enough that I could do that I don't really see a problem with that.

Were the explanations to questions in the curriculum helpful for students (for asynchronous or synchronous)?

C. Yes, in general. There were a couple that I like altered just a little bit just to kind of make the wording different but yeah I'd say for the most part

A. Yeah, if I had time I would look at them in advance.

Was the “Apply your knowledge” section helpful?

A. I didn't do every single one, but I did use it. I did find them to be helpful.

C. I did. I can't honestly say though that I ever had a lot of time to discuss those things which is too bad because there were really interesting articles but I never really figured out exactly how to you build that in and have a conversation about those articles and I feel having students read it then summarize - some students were pretty genuine but a lot of students were just doing it to get it done. I mean again very cool articles but I'm not sure exactly how to build that in in a genuine way.

D. I liked the end - this stuff about apply your knowledge and reading a real time article and having a format to discuss it in. That was a nice formatting [of the worksheet], they don't know how to read them in high school and there may have been a lot of times where they are given either closed questions or open but that was a different way.