

Larger Lessons of a Pandemic: Anchored in Pixar Films

Jeneva Clark

What lessons can be learned from the COVID-19 higher education transition to online learning? In a mad dash for hand sanitizer and online teaching tutorials, what did you notice, and how can that inform your teaching career in meaningful ways?

Of course, all instructors had to learn about educational technology—how to minimize chat boxes, share screens, and troubleshoot lockdown browsers. However, those how-to's are temporary. There are larger lessons to take away, which will outlive this pandemic and the next. In this article, I invite you to pause and notice some of those larger lessons.

Elasti-Teaching

On occasion, every so often, just when math professors think they have it all figured out, an unexpected phenomenon comes along and humbles everyone. COVID-19 did just that. With most institutions switching to online delivery mid-semester, all instructors were forced to quickly adapt their courses. This crisis revealed one of the most important, but often forgotten, attributes of teaching: flexibility.

Instructors' perfectionism often overshadows flexibility. When you look at a mentor, you might usually see detailed forethought. After all, high-quality instruction is rightly thought to be well planned and well executed. Some seasoned professors have all course content paced, sequenced, revised, and edited before a semester even starts. You might typically have few opportunities to see how mentors handle necessary, substantial, and unexpected change, like the change that was thrust upon them by this coronavirus.

Many mathematics professors prepared pencil-and-paper exams, but suddenly, with COVID-19's impact, no longer had the face-to-face time to administer those exams in a simple way. Proctoring a paper exam online, with traditional security measures, could take mastery of several platforms: videoconferencing, learning management systems, email, cameras, and Cloud storage. Some faculty mastered needed platforms, and some faculty flexibly restructured their assessments to streamline and simplify demands.

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To anchor these larger lessons, let us use inspiration from well-known Pixar films. From *The Incredibles*, my favorite soccer mom superhero, Elastigirl, can stretch and morph her body into any form imaginable. I presume she is a topologist. When transporting her family, she takes on shapes of parachutes and boats, and when dominating fight scenes, she takes on shapes of slingshots and cannonballs.

A flexible math instructor can try to be a parachute protecting a student's grade from a crash landing, or a trampoline to springboard new mathematical inquiry. In your experiences, I hope you noticed faculty bending their plans with grace, modeling the larger lesson of flexibility.

Just Keep Teaching

Sometimes circumstances beyond your control will change your direction, will limit your progress, and/or will cause confusion. It might be years before this happens again on such a grand scale as COVID-19, but bumps in the road can happen on smaller scales too, within departments or within families, for example. As trivial and trite as it may sound, when such constricting circumstances surprise you, try to orient yourself toward your teaching goals, and just keep teaching.

In a climactic *Finding Nemo* scene, a school of fish is captured in a fisherman's net. Nemo champions his new tank-learned wisdom about teamwork, and Dory chants her just-keep-swimming lesson about resilience. Marlin, formerly pessimistic "Mr. Grumpy Gills," is now a believer and cheers for the school to pull the net and break free. In similar ways, when ensnared in COVID-19 complexities, the broad community of mathematics instructors worked through some initial disorientation, began communicating with one another more openly, and began combining their efforts toward teaching mathematics online. Professional organizations and institutional leaders offered support and resources, with acceptance of ed-tech learning curves, but all while coaching resilience with "Just keep teaching."

In this online teaching crisis, you may have heard administrators and faculty openly discussing lowering the bar for their own expectations of excellence, admitting that change of this magnitude can be disruptive to teaching and learning. While this discussion might have mitigated some instructors' anxieties, the inner perfectionist dominated most instructors, and faculty fiercely debated the pros and cons of asynchronous instruction, splitting hairs over what should be called "best practices" for teaching online. Each instructor needed to make decisions about what made sense for them, their students, and the mathematics they teach. Each person had to figure out what it should look like to "just keep teaching," even in a pandemic. Resilience is often valiantly flawed and beautifully imperfect, but it doesn't give up.

You Are a Human!

For face-to-face classroom interactions, there is an inherent social structure. Before you walk into the classroom, everyone is just a human, but once in a classroom, the instructor largely influences the environment. There is an expected default; the instructor uses an understood authority to establish classroom norms, and the students follow. However, each online learning environment is a function of shared responsibility, as each student must exercise control over their own physical space, managing their distractions and attention. In contrast, no one's cat has ever caused a disruption in a face-to-face mathematics classroom. When teaching online, however, feline interference falls squarely within expectation.

Remember when Buzz Lightyear talked to Star Command in *Toy Story*? Woody yelled back, "You are a toy!" Online instruction does not eclipse human interaction. Before ever entering the classroom, or the teleconferencing format, teachers and students are just humans. You are a human! Please show your humanness even when teaching online. That might mean you show empathy, that might mean you give inspiration, or that might mean cats occasionally share your spotlight and it's OK.

Trenholm, Alcock, and Robinson [Tre16] interviewed instructors, asking them to compare online to face-to-face teaching. They then sorted out potential advantages and disadvantages to online teaching. One instructor described that in a face-to-face class, it was easier to keep students' attention because they simply needed to prevent students from "tuning out;" whereas, in an online course, the instructor felt the need to first somehow get students to "tune in," which was a more difficult task. This difference most likely lives in instructor perceptions and stems from feeling less control over this new shared learning environment.

If instructors do feel more pressure in an online environment to hook students' interest through engagement, then it may be an impetus for implementing active-learning teaching strategies. However, before calling Star Command for all the fanciest new technology, remember that you are a human. Connecting and communicating with your students might be all you really need.

Conclusion

In summary, I invite you to reflect on your lived experiences through the recent mass transition to online learning. Consider what lessons may have longevity. In a few decades, when you pass on pedagogical lore to a new generation of faculty, what tale will you tell of 2020? Some may brim with success stories and describe it as flying, but others may liken it to "falling with style." Regardless, I hope we can all notice larger lessons of flexibility, resilience, and humanness, and I hope these lessons follow you to infinity and beyond.

References

[Tre16] S. Trenholm, L. Alcock, and C. Robinson, *The instructor experience of fully online tertiary mathematics: A challenge and an opportunity*, *Jrnl. Res. in Math. Ed.* (2) 47 (2016), 147–161.



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Credits

Author photo is courtesy of Ben Walker.

Turning a Zoom Talk into a Live Talk

François Bergeron

1. Introduction

In these times of generalized restriction on international travel, which will probably be in place for several months, most mathematical meetings are currently being organized in virtual presence mode. We all have had to adapt and discover how to give lively and interesting talks notwithstanding. Many tools are available for this, among which Zoom seems to be somewhat prevalent. It appears that it has escaped notice that one of its features makes it possible to reproduce a talk-style typical of the meeting that we usually attend in "live mode." In short, this is simply to use its Virtual Background feature as a projecting device for slides. One can even go from one slide to the next using either the arrows on a keyboard or a clicker. In this way, in a Zoom meeting, the speaker can stand in front of his/her slides and point at them in real time, just as usual.

2. About Zoom Meetings

By this time many of you have probably become Zoom meeting wizards. For the others like me who are still learning, here are a few reminders. The organizers of the meeting decide on many options for the meeting, and you have to make sure that you understand these and that

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