

The Case of the Catastrophic Classroom

Case by Drs. Catherine Patocka, Jeremy Voros, Robert Cooney

Case

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Objectives / Questions:

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Design Hackathon

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Usage

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Jill, an emergency physician, is a recently-hired junior faculty member at the St. Elsewhere Emergency Medicine (EM) residency program. She completed her own training 5 years ago at a well-respected residency, where she was chief resident, and then stayed on as a faculty member. She had a strong interest in resident education and was active on the CORD listserv. But there was a well-established leadership team at her home program and limited opportunity for advancement.

Jill took a position at St. Elsewhere, a less-established residency, that offered her a leadership role. Her first challenge in this new role was a revamp of their weekly half-day educational conference.

This is how the St. Elsewhere residency program's informational web page described about their conference:

"Our residents are relieved from regular hospital duties (i.e. they receive protected time) to attend conference. The sessions are held in a Campbell-Morrison memorial lecture hall at St. Elsewhere every Wednesday from 7:30 am to 12:30 pm for their educational conference. The day begins with a Morbidity and Mortality conference, followed by various lectures delivered by senior residents or faculty members. Lecture topics are on a repeating curriculum on a 1.5-year cycle, thereby ensuring that the residents see every topic as both a junior and senior resident. Our curriculum is based on the EM Model and uses guided readings from prominent EM textbooks."

When Jill emailed the current program director (PD) about who the last curriculum lead was within the faculty, and how s/he designed the curriculum. The PD quickly wrote back stating that he couldn't remember, and that he thinks it was always that way. He wrote: "I think this is the way things are done because this is the way things have always been done."

Jill's First St. Elsewhere's EM Conference Experience

Jill arrived early and sat in the back of the hall taking notes throughout the first

conference. She was joined in the back of the lecture hall by a rotating cast of 3-4 faculty members who came and went throughout the conference. Only one other faculty member attended the whole conference but he worked on his laptop the whole time.

The Morbidity & Mortality (M&M) conference was a series of typical case presentations lead by a senior resident. The resident involved in the management of the case stood before the group as well, answering questions about his thought process and management choice. Several residents took questions clearly placing blame on their choices, and one of the residents became quite tearful and had to leave the podium mid-presentation. A 4-question multiple choice quiz followed M&M, about the week's assigned reading. Residents perfunctorily completed the quiz. Correct answers were provided by the residency coordinator afterward. No discussion followed.

M&M was followed by several PowerPoint-driven, didactic lectures. One was given by a senior resident, and included a detailed review of the Krebs's Cycle. Another was given by a faculty member on renal emergencies but the slide deck was clearly prepared by someone else, as evidenced by the fact that the other person's name was still listed on the title slide.

Throughout the conference most residents were slumped in their chairs staring at their smartphones. One resident slept in the front row.

There was confusion over which faculty member was supposed to deliver the final lecture and the assigned person was not present or reachable by phone. As such, the conference ended 45 minutes early.

Jill Meets with the Stakeholders

Jill met with one of the chief residents, Rob, to discuss conference. Rob is well-respected among the residents and besides being clinically excellent is a reliable advocate with the administration.

He expressed frustration about conference. The format is largely unchanged from when he was an intern. He feels too much of the teaching is done by senior residents - which though beneficial for junior residents, leaves senior residents' needs unfulfilled. Early on he had hoped to stay at the program when he graduated but now he is actively looking for an academic position elsewhere.

Jill heard more complaints from faculty after their last staff meeting. Several staff members complained that there was no CME credit for them if they attended. One faculty member, who had previously been a regular presenter at conference, complained about the lack of financial incentive (i.e. "There is no buy-down! It's essentially volunteer work!") or even recognition throughout the residency for active involvement in the educational conference ("I don't even get a thank-you letter!"). Others complained that the early start time made coordinating childcare difficult. Some expressed surprise to learn of any concern over the quality of conference.

Jill also met with the program director, Ravi. He has been in the position for 5 years. Two of those years were complicated by conditional accreditation by the ACGME. When asked about conference he became exasperated. His primary goal is to stick to the ACGME requirements, especially those concerning total conference time and faculty supervision. He acknowledges his focus has been on duty hour compliance and implementing resident assessment based on the new milestones, rather than educational innovation.

Jill Seeks Advice

Jill reached out to her colleagues on the various listservs for suggestions to reinvigorate St. Elsewhere's educational conference. Many users suggested a "flipped classroom" approach but each had different conceptions of the final product. Some recommended FOAM resources on the internet, but others expressed concern about ACGME compliance. Other popular suggestions included small group sessions, off-site learning, and self-directed study.

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Questions for Discussion

1. What problems have you encountered in your EM Conference / Academic Day proceedings?
2. What are problems that you can identify in the above case? Are there any specific problems that resonate with you?
3. What are some solutions you have encountered or seen with regards to rejuvenating academic proceedings for residency programs?

Competencies

ACGME	CanMEDS
Systems-based Management (SBP2)	Scholar Leaders/Manager

Intended Objectives of Case

1. Discuss and identify problems within your own academic didactic sessions.
2. Describe approaches identifying possible solutions for these problems.
3. Describe the design thinking process and how it might assist you in discovering problems and developing solutions.

Design Thinking

Why run a Design Hackathon?

By Robert Cooney MD, MSMedEd



Why 'hack' conference?

Simon Sinek says to 'Start with Why?' So why did we want to 'hack' conference? Quite simply, this was a way to share our passion for education, demonstrate the principles of design thinking, and stretch our own abilities. It all started with an idea. Each year, as the CORD Academic Assembly winds down, the track chairs meet to discuss what worked well, what needs the ax, and what new ideas we can come up with for the following year. The 2016 meeting was a resounding success and pushed the #FOAMed sessions into the limelight. It was so popular, in fact, that we earned our own track, though renamed iMedEd (Innovations in Medical Education).

Not wanting to rest on our laurels, we proposed several new ideas. I had been studying quality improvement at the time and design thinking kept coming across my radar (the tools of QI and Design Thinking have significant overlap).

We decided that Design Thinking definitely fit within our scope of innovative practices, but how to apply the tenets? How about a design thinking workshop! Thus, the Hackathon was born. Needing a LOT of assistance, I reached out to Michelle Lin and Teresa Chan who readily agreed to help out and the rest is now history.

What is Design Thinking?

Design thinking (DT) is a mindset that can help propel innovation. DT proposes an integrative approach to innovation by focusing on three overlapping 'stages': discovery, ideation, and implementation. The process is NOT linear. Like the PDSA cycles of QI, DT proposes using an iterative process to refine each phase and maximise learning. While engaging in this process, design thinkers must also manage the relationship between feasibility, viability, and desirability. Feasibility represents what is actually possible, viability focuses on the business model, and desirability represents what people will accept or seek out. Design thinking can be used to improve many vexing problems in medical education, whether the problem relates to the curriculum, learning environment, processes, and even the education "system."

How Does Design Thinking Work?

PART 1: Discovery

Design thinkers begin the process with problem identification. This is often a very easy task. Just think to yourself about problems, frustrations, and other things in your life that need to be 'improved'. Any of these are fair game for DT.

HINT: Carry note cards around with you to capture these issues and create a 'bug list' to address in the future!

Expert Response *continued*

PART 2: Interpretation

Once the problem is identified, design thinkers then engage in defining the problem. DT is 'human-centered' meaning that defining the problem involves the development of deep empathy with 'end users'. In medical education, these could be learners, teachers, and even the patients. This stage involves observing how people interact with the problem and in depth interviewing people to gain their insights. Refining the problem can take several interviews to get to the bottom on the core problems.

HINT: Use a structured interview questionnaire to make sure that everything is covered, but don't be afraid to use a LOT of clarifying questions (tell me more; why?).

DT is a collaborative skill set and encourages groups to work together to refine the problem. Reviewing the data collected above as a group can help parse out the key needs and ideas.

HINT: It's Stick Note time! As you review the data, try to put one key insight on each sticky note. Then, as a group, begin to sort the notes into themes and sub-themes. How many different ideas can you identify?

PART 3: Ideation

With the problem is defined, it's time to ideate. "How might we...?" Is a simple way to create actionable ideas. These questions help to promote brainstorming. As a group, get the sticky notes out again and see how many possible solutions you can create to answer the question. Key here is not judging anything and building on others ideas. "Yes, and..." and a fun way to add to others ideas.

For instance a question you might ask with this past month's case would be:

"How might we...improve resident lectures"

A colleague might respond:

"We could do a slide design workshop."

And then you might say:

"Yes! And we could award prizes for the most novel slides."

After the brainstorming process wraps up, you should begin to see patterns in the ideas. As a team, engage in a note sort similar to the problem identification stage. This should provide you with several possible solutions to your identified problem. If note, keep brainstorming!

HINT: Institute some rules for brainstorming to help promote creativity. We like IDEO's brainstorming rules

HINT: If you get stuck, there are tools that can prompt you.

Examples include:

- [OFlow app](#),
- [IDEO Method Cards](#),
- [Unstuck Cards](#),
- [ThinkPack](#)

PART 4: Experimentation / Prototyping

"Fail fast, fail often, to succeed sooner."

-Entrepreneurs mantra

The next phase of DT is implementation. It is important to recognize that you can not just take your brainstorming solution and put in action. Instead, this phase begins with experimentation.

Failure will be a constant companion early in the experimentation phase. This makes it important to prototype. Prototyping involves actually diving in and putting an model solution together and trying it out. In educational prototyping, this can be accomplished by creating a storyboard, diagramming the proposed solution, mocking up the proposed application or learning space, or even creating a role play to demonstrate the solution. Also critical to this phase is feedback. Take your prototype and show it off to your learners and faculty. Their feedback will unveil flaws in the prototype and allow you to fix them during this phase. The earlier you learn these, the sooner you can move from prototype to launch.



About the Expert

Dr. Cooney received his medical degree from Jefferson Medical College and completed residency training in Emergency Medicine at Allegheny General Hospital. He then went on to earn a Masters in Medical Education from the Lake Erie College of Osteopathic Medicine followed by the AIAMC/IHI Quality Improvement Scholars Program. He is currently an attending in the Department of Emergency Medicine at Geisinger Medical Center in Danville, PA, USA and serves as the Associate Program Director in the emergency medicine residency program. His interests focus on the intersection of education, quality, and technology.

Expert Response

How to run your OWN design challenge!

By Rob Cooney MD, MSMedEd & Teresa Chan MD, FRCPC, MHPE (Candidate)

Hosting a design challenge is a great way to learn the process and expose learners to the concepts. Before you begin, identify a problem that you want the participants to focus on solving. We used the weekly didactic experience as our starting point. Try to find a room that allows for space and movement, gather your supplies, and start designing!

Here is a description of what we did at our #CORDaa16 workshop:

Discovery: At CORD, we decided to accelerate the empathy process by putting up the Catastrophic Classroom case to curate a community response to the problem. We also recruited faculty and residents to serve as end users. The participants interviewed them to gain insights into the problem.

Interpretation: From here, the participants moved to the Post-Its followed by a large group note sort.

Ideation: Teams formed and people wrote a very specific problem statement. From here, the teams engaged in brainstorming followed by another large note sort.

Experimentation: Teams took their ideas home overnight to prototype. They were tasked with showing their solutions to fellow faculty members for feedback and integration.

After refining their idea for a final hour, they presented their ideas to the judges, many of whom were end users from Day 1.

Want to learn more? Here are some suggested references:

1. [Creative Confidence Book and Website](#)
2. [Change by Design](#)
3. [Make Space](#)
4. [Design Thinking for Educators](#)

Downloads

To make things easier, the following two files are available for you to download and use as a sample template or activity booklet. This is what we used for the ALiEM CORD Design Hackathon.

[iMedEd Hackathon Slides](#)
(Click here to download PDF)



[Design Hackathon Handout](#)
(Click here to download PDF)



Recommended supplies:

- Sticky notes (lots and lots)
- Markers
- Camera (phones will work)
- White boards (you can purchase [cheap whiteboard panels](#) at your local hardware store)
- (Alternatively, you could buy the large [3M Post-It Easel Pads](#))
- Tape
- Music
- Candy
- Timer (search google for "google timer" and a nice web-based stopwatch can be displayed)

Optional supplies:

Additional Prototyping supplies:

- String
- Popsicle sticks
- cardboard/poster-board
- Rubber bands
- Scissors

A Participant's Account

My Design Challenge Experience

By Therese Mead DO



When I registered for the 2016 CORD Academic Assembly, I was excited to discover the iMedEd track. I immediately signed up for innovative discussions ranging from slide design to podcasting. I can't believe that I almost missed the best experience of iMedEd- a two day Design Thinking Hackathon!

Although I didn't register for the event (yes, I'm calling myself out on this one), I was having a great time and learning so much from the other iMedEd sessions that I walked in at the beginning of the Hackathon to see what was going on. I expected to sit on the sidelines, but Dr. Teresa Chan invited me to join a small group and the next thing I knew, I was fully immersed in a Design Thinking challenge.

This was my first experience in Design Thinking and gave me a whole new outlook on difficult problem solving. Initially, I sat at a table with a group of 5 of my fellow EM educators and we interviewed Jill's residents and peers to define the problems with her educational conferences. After a brief brainstorming session, we collaborated with the rest of the groups in the Hackathon to organize the problems we identified (visually displayed in a rainbow of sticky notes on project boards).

For the next part of our challenge, we identified themes to the problems, then divided into small groups to start exploring solutions. I teamed up with Dr. Michael Overbeck to form Team M&M. Team M&M tackled the issue of quality of Jill's conferences and we spent the next day developing and prototyping potential solutions. (More on this later!)

The guidance of the facilitators really made the experience. I was encouraged to step out of my comfort zone and consider our task in a very organized manner that promoted creativity and collaboration. We were ready to pitch a promising solution to the judges by the end of the 2 day event - thanks to the Hackathon team. I'll definitely be taking Design Thinking back to my residents and can't wait to put my new skill into action.

Design Team Responses

All four of the Design Teams did extremely well in the Design Challenge. At the end, a mixed panel of faculty and residents helped us to select our winners... However, in our hearts they all had great, winning ideas!

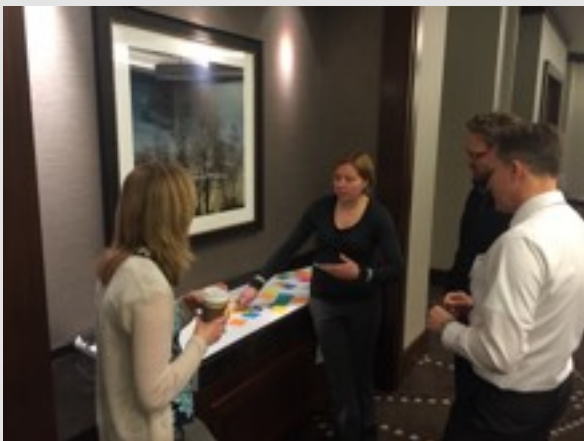


1. First Place: Team Engagement: "All In"

Team members: Alexandra Grino, Jordan Spector, Jessie Nelson, Leslie Oyama, Antonia Quinn

Their Selected Problem: The EM faculty have little incentive to attend and participate in the division's weekly didactic curriculum

Their Solution: Team All-In developed a gamification of conference called "The Conference Cup" - a novel award for the faculty team that contributes most to the didactic curriculum, scored by "EVU's", an academic analog to the clinical value of RVU's. Varying levels of participation by residents and faculty earn their team varying numbers of EVUs. A publicly displayed leader board, and a yearly draft of faculty team members increase the stakes for active participation. Additionally, the highest scoring member in the winning team is awarded an individual prize.



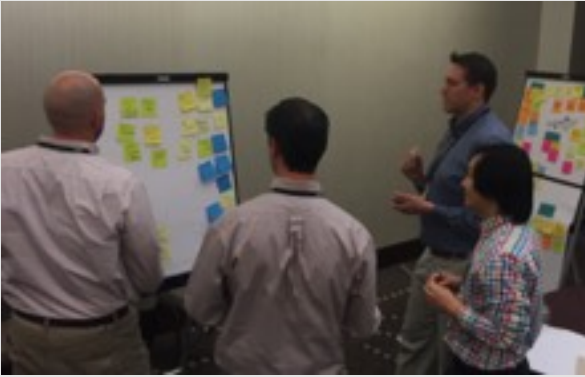
2. Second Place: Team M&M

Team members: Therese Mead, Mike Overbeck

Their Selected Problem: Lack of faculty engagement, inconsistent lectures and decreased resident interest lead to poor quality experiences for all participants

Their Solution: Team M&M also converged on improving the lecture experience by applying gamification to the lecture experience. In their solution, residents and faculty will be placed on teams and points will be assigned for desirable accomplishments and behaviors (e.g. innovation, application of novel instructional methods, resident and faculty participation, completion of asynchronous exercises, quality of faculty lectures). By increasing the stakes and intensity of involvement of all participants, they would improve the lecture quality and enhance the quality of the synchronous didactic experience.

Design Team Responses *continued*



3. Third Place: Team MedEx Delivery

Team members: Aaron Brown, Bob Sobehart, Marc Phan, Chris Fowler

Their Selected Problem: Lack of innovative educational techniques in resident education

Their Solution: Team MedEx gave what was surely the most theatrical pitch, proposing to increase use of innovative teaching methods in resident education by encouraging bi-directional mentorship and team teaching, improving familiarity and access to progressive educational resources, and providing positive incentive for use of these methods. A most feasible solution!



4. Fourth Place: Team Couch

Team members: Ankit Shah, Loice Swicher, Daniel Robinson, Zach Jarou, Shana Nelson

Their Selected Problem: St. Elsewhere's conference suffers from a toxic learning environment.

Their Solution: Team Couch proposed quarterly retreats with residents and core educational faculty meant only to focus on the learning experience, rather than learning emergency medicine. With time set aside for socializing and sharing between key stakeholders, with a little liquid courage facilitating, the residency will move forward together to improve their conference.

Curated Community Commentary

By Catherine Patocka MD, FRCPC, MHPE(candidate)

This case focused on Jill, a junior faculty member who has recently been hired to an education leadership role at St. Elsewhere hospital. Her first challenge in this new role is to revamp their weekly half-day educational conference. She is faced with an uninterested overworked Program Director, Faculty members who rarely attend conference and when they do don't engage because a lack of incentives (CME or financial) and instructional design that focuses largely on didactic lecture presentations and is primarily senior resident driven. Jill reaches out to her mentors from the CORD listserv and receives a mixture of advice ranging from FOAMed resources, to varied instructional strategies (flipped classroom, small group sessions, self-directed study), but others caution about maintaining ACGME compliance.

Problems with EM conference identified by commentators were similar to those in the case: specifically that improving EM conference is an extremely challenging task, lecture-based instructional strategies are generally less desirable than other active learning strategies and an almost universal difficulty with faculty engagement and participation.

With regards to solutions a few major themes arose from the discussion, in particular the importance of engaging stakeholders as well as participants in the solution, considering the use of a variety of instructional strategies and considering whether the ACGME requirements need to be updated to reflect a more learner-centered competency-based approach.

Several discussion participants outlined their experience with trying to single-handedly raise the level of conference. Dr. Jordan Spector described "biting off more than he could chew" by simultaneously delivering lectures, revamping journal club and overseeing/managing the entire curriculum, while Dr Anand Swaminathan noticed that by giving weekly lectures to the residents his colleagues began to loathe him as the residents began to replicate his behaviors/practice. Dr. Will Goldenberg suggested changing a small subset of conference at a time to harness progressive buy-in and support of change. Most commentators felt there was a strong need for balance and accountability with regards to quality improvement and there was strong consensus on the need for support from the program director, Chair of the department and other faculty. With regards to solutions Dr. Aaron Brown highlighted the need to cultivate a leadership team and core faculty group to create the energy excitement and support necessary to drive change. One might also consider developing a Conference Improvement Committee with faculty and resident members to harness a culture of

Contributors

Thanks to the participants (in alphabetical order) for all of their input:

Aaron Brown	Jordan Spector
Teresa Chan	Anand Swaminathan
Alex Chorley	Loice Swisher
Robert Cooney	Jeremy Voros
Will Goldenberg	Antonia Quinn
Kory London	
Jeff Riddell	
Rob Rogers	
Will Sanderson	

ownership and accountability and invest in some faculty development for those that are involved in EM conference.

There was strong consensus on the challenges of a primarily lecture-based format. Dr. Jeff Riddell pointed out lecture-based strategies do not promote active learning, do not capitalize on or address a variety of learners and learning styles and can lead to faculty repeating the same content year after year. Despite these challenges it can be difficult to incentivize faculty members to change the way they deliver educational material. Commentators suggested a variety of alternative instructional strategies that could be used in place of lectures including:

1. small group sessions,
2. simulation sessions,
3. flipped classroom (or blended learning).

Our participants generally stressed that implementation of these strategies was contingent upon a strong faculty development program to provide faculty members the time and training necessary to practice and implement these new strategies. Dr Loice Swisher brought up the incorporation of independent individualized instruction (asynchronous learning) as a way of exposing residents to some of the best teachers/lectures that EM has to offer. She suggested lectures from regional and national EM conferences or the ALiEM AIR Series which introduces residents to some of the best FOAM available. A few less dramatic (potentially more feasible) changes included Dr. Riddell's suggestion of including core content lectures delivered in 15-20 minutes followed by break out small group discussions stratified by training year and MedEd Fellow Dr. Alex Chorley's suggestion to incorporate pre/post lecture quizzes to promote interest in the topic and require active recall of the material. Dr. Will Sanderson suggested reorganizing M & M towards using mistakes as opportunities for growth and quality improvement.

Curated Community Commentary *continued*

Additionally Dr. Kory London recommended incentivizing faculty using the CORD supported “Core Faculty” designation and ensuring that all of the conference content is not resident-driven. Overall commentators, advocated the application of solid learning principles to whatever approach is taken and Dr. Rob Rogers suggested the book *Make it Stick* as a good starting point.

Finally, many commentators were cognizant of Accreditation Council for Graduate Medical Education (ACGME) accreditation standards and advocated a balance of large-group planned educational activities and independent individualized instruction to ensure standards were met. Drs. Riddell and Sanderson advocated for revision of the ACGME standards to reflect a more learner-centered competency based approach questioning why every learner (regardless of their ability and performance) has the same attendance requirements despite conference attendance not being correlated with in-training exam scores.⁽¹⁾

References

1. Hern Jr, Gene, et al. Conference Attendance Does Not Correlate With Emergency Medicine Residency In-Training Examination Scores. *Academic Emergency Medicine*. 2009 (16 Suppl 2): S63-S66. PMID: [20053214](https://pubmed.ncbi.nlm.nih.gov/20053214/).

About

The Medical Education In Cases (MEiC) series puts difficult medical education cases under a microscope. We pose a challenging hypothetical dilemma, moderate a discussion on potential approaches, and recruit medical education experts to provide their insights. The community comments are also similarly curated into a document for reference.

Did you use this MEiC resource?

We would love to hear how you did. Please email MEiC@aliem.com or tweet us @Brent_Thoma and @TChanMD to let us know.

Purpose

The purpose of the MEiC series is to create resources that allow you to engage in “guerrilla” faculty development – enticing and engaging individuals who might not have time to attend faculty development workshops to think about challenging cases in medical education.

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