

[COVID Information Commons \(CIC\) Research Lightning Talk](#)

[Transcript of a Presentation by Nicola Sochacka \(University of Georgia\), February 10, 2021](#)



[Title: RAPID: Using SenseMaker to Investigate Complex Dynamics in Social Systems to Inform Agile, Real-Time Policy-Responses in Times of Crisis](#)

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Nicola Sochacka:

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Okay thank you so much, Katie. So as Katie said, my name is Nikki Sochacka and I'm presenting on behalf of my team at the University of Georgia.

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So the main research question that we examined in our project was how did students, faculty, and staff in a college of engineering experience the COVID-19 crisis and transition to online learning?

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So we used a novel approach called SenseMaker to do this work. SenseMaker is a method designed to inquire into and change complex social systems. So our College of Engineering is an example of such a system. SenseMaker does this by collecting stories from within the system and then posing the question: what changes can we make to create more stories like this and fewer stories like that? Or put another way: how can we amplify positive experiences and dampen negative experiences?

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SenseMaker has been described as a mixed method that combines the power of first-hand narratives with the statistical authority of quantitative data. So as I mentioned earlier, narratives, or short stories, are what make up the qualitative data in a SenseMaker project.

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So they- so these narratives are collected via a prompt that looks something like this: so tell us about something you've recently experienced. So the quantitative data comes from how participants make sense of their own stories. So participants do this by answering a series of questions that are part of what's called a signification framework.

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So the signification frameworks combine or comprise three different types of questions: triads, dyads, and multiple choice questions.

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This is an example of a triad. So after participants tell their stories, they make sense of their own stories by moving the dot on the triad to the position that best fits with their story. When we see the data on the analyst software side, it looks like this. So each dot represents one story. So we can use that software to highlight clusters of stories. So, for example, here I have selected stories in the grit and perseverance corner of the triad. The titles of the story on the left hand side are what I see when I click on one of these titles, so this allows me to read the entire participant's story.

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The second type of question in the signification framework is called a dyad, and this is an example. And these work in the same way. Participants move the dot to the position on the dyad that fits with their story.

Slide 9

And here are some examples of multiple choice questions. Participants' responses to these questions can be used to filter the data. So how did our college experience the transition to online learning?

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So we collected 71 stories in the spring of 2020 and a further 71 in the fall. In the spring, the majority of the faculty and staff stories were positive. Unfortunately, the majority of student stories were negative. When we looked closely at the data, we saw that one possible explanation for this was that faculty had agency in how they responded to the crisis. Yes, they had to go online, but they could decide what that looked like. Students, on the other hand, were on the receiving end of these changes.

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So SenseMaker also allows for more advanced visualizations, like this one, which can point to opportunities for positive change. So this visualization of the data is called a heat map, and it comes from combining participant responses to two questions. It's actually the dyad and the triad that I showed you earlier. So here, in the top left hand corner, we can see a concentration of stories that participants rated as high struggle and low praise by those in power. And here's another concentration of stories that are low struggle and high praise by those in power. So the question is: what can we do in real time to create more stories like this, so the bottom right hand side, and less stories like are at the top? So to answer this question, we can study the story so the actual experiences the participants recounted. And I'm going to share one of those stories right now.

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So I'll give you a few seconds to read the highlighted parts of the story.

[Text reads as below, highlighted text in italics: "In a typical semester, *finals week is often pretty grueling*. Engineering professors almost always give 3-hr exams for their final...

...the outbreak caused the professors to reorganize their finals... *rather than a tough exam for a engineering elective-level class, he made it a project with several options*. We could write a report on engineering case studies, write a critique of a chapter from a textbook he was working on, or solve an extended problem using both analytical and numerical methods.

What amazed me is the breadth of thee project. *Since students have different strengths, they can choose the option that best compliments their abilities, and I would like to see this sort of project format in future courses.*"]

So here we see a possibility for amplifying a positive experience in our system. So we shared this story with our faculty to provide examples of alternatives to final exams in online environments. So of course there were negative stories too. In these stories, students spoke about isolation, lack of flexibility, internet connection problems, COVID-19 cases in the family, and more. So this is just a taste of what we found in the spring data. What about what happened in the fall? Unfortunately, we saw a startling shift towards more stories of struggle and less of those which showed praise by those in power.

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So this is that same heat map that I showed you earlier this time created using MATLAB.

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Here is that same heat map from the fall. Here we can clearly see two concentrations of stories have now all clustered around much higher struggle and low praise by those in power. So what happened? What changed from the spring to the fall? So I've described our college as a social system. One explanation is that in the fall the university system in Georgia mandated in-person learning through a hybrid teaching model. This requirement undermined faculty and student agency and how they wish to engage in instructional activities in the fall. This and other findings from our spring and fall data are available in four reports we've published as part of our RAPID grant, which are available [here](#).

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Thank you and I look forward to your questions at the end of this session.