

# Student Interest, Concerns, and Information-Seeking Behaviors Related to COVID-19

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What are the different ways that places have attempted to handle the coronavirus—what works and what doesn't?

How is it different from the flu?

How is the virus spreading so easily?

How does it affect the body?  
What is it actually doing on a cellular level?

# Significance



Students bring questions to class about disease outbreaks (Smith et al., 2017)



Students feel uncertain about the validity of information they acquired about COVID-19 (Roselina et al., 2021)



Connection between COVID-19 and socioscientific issues (SSI)



Many teachers do not feel well-supported in design of SSI-based instruction



# Study Goals

- To help science educators address students' questions and concerns about COVID-19
- Better understand the sources of information students frequently use
- We want students to be able to make informed personal decisions regarding their health such as wearing masks, social distancing, and getting vaccinated.

# Research Questions



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How has COVID-19 impacted students' lives?



How have these changed over the course of the pandemic?

## What is interest?

- Interest is an emotion that motivates individuals to cultivate knowledge about a particular topic (Silvia, 2006)

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## Two main types:

### 1. Situational Interest

- Focused attention
- Triggered by external stimuli
- Often temporary



### 2. Individual Interest

- Intrinsic predisposition
- Enduring
- Strongly linked to academic performance, attention, goal-setting and engagement in learning

(Hidi & Renninger, 2006)

# Study Overview

We worked with high school teachers to develop a socioscientific issues (SSI) curriculum (Sadler et al., 2020).

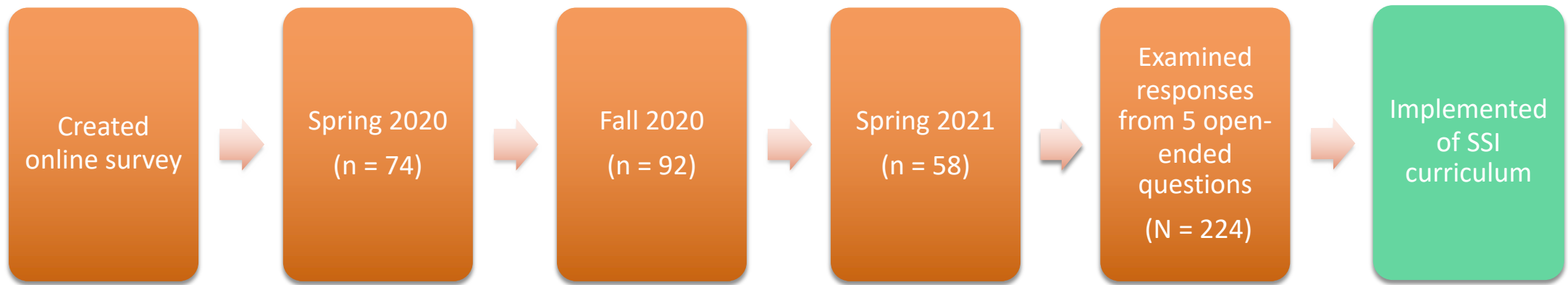
- How do we slow the spread of COVID-19 within students' communities?
- <https://epiclearning.web.unc.edu/>



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# Survey Questions

1. What interests you most about the coronavirus?
2. What pieces of information about the coronavirus are you most interested in learning?
3. What sources of information are most important for you if you are trying to find out about an issue like the Coronavirus?
4. What are your top three concerns about COVID-19?
5. How is COVID-19 affecting you and your family?

## Student Participants

- Attended 1 of 4 high schools in the Midwest
- 59% identified as women, 37% men, 0.8% transgender, 0.4% non-binary
- 66% indicated White/Caucasian, 30% African American, 7% Latinx, 6% Asian, 1% Native American or American Indian
- 8% were high school freshmen, 59% sophomores, 20% juniors, and 14% seniors.

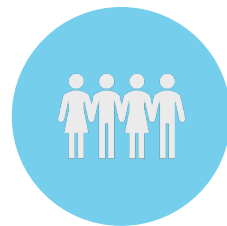
# Data Analysis



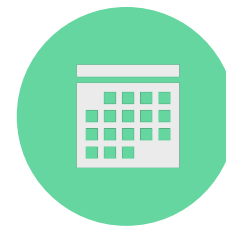
Open-coded responses using thematic analysis



Multiple rounds of comparing themes



Quantified the frequency of each themes.



Ran chi-square tests to determine changes across the three time points



# Example Coding

“I am most interested in learning about the **symptoms** of the virus and how scientists can come up with a **vaccine**”.

Symptoms, Vaccines

“The virus might **evolve**, a **vaccine** is not available any time soon, and **someone I know dies** from the virus”.

Mutations, Vaccines,  
Myself/friends/family dying from  
COVID-19

**Table 1.** *Thematic Analysis of Student Interest Related to COVID-19*

Theme	Questions Raised by Students	Exemplar Response	Percentage of Respondents (% , N = 224)
Origin of COVID-19	Where and how did COVID-19 emerge?	“Where it had originated from and how it came to be.”	20.5
Vaccines	How do vaccines work? How will vaccines be distributed? Are vaccines safe?	“I am interested in learning about whether there are any current medications/vaccines that can stop the disease before it gets too deep in the body, as well as if they can lessen the symptoms of COVID-19.”	19.2
Transmission	How does COVID-19 spread?	“What it is, how it spreads, that it's not like the flu, asymptomatic cases.”	16.5
Infection rate*	How and why does COVID-19 spread so quickly?	“I think it's interesting how fast coronavirus has spread.”	16.1
Body's response	How does COVID-19 affect the body and specific organs?	“How our body deals with it and the effects it has on our body.”	12.1
Biology of COVID-19	How do viruses like COVID-19 work? How do viruses replicate?	“How it works (what proteins/cells does it attach to/invade? Is it an RNA virus or a DNA virus?)”	11.6

# Where do students acquire information about COVID-19?

- Health agencies (20%)
- Healthcare professionals (17%)
  - Significantly decreased over time  
( $X^2 (2, N = 224) = 8.2, p = .017$ )
  - “firsthand experience”

“Government-funded, unbiased sources including the NIH and CDC to ensure that the information is current and reliable”

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  - “firsthand experience”
- Friends or family (14%)
- TV news (13%)
- Social media (7%)
  - Twitter, YouTube, Tik Tok
- Teachers (7%)
- Online news articles (6%)

“I prefer to get information from my family though because it is easier to understand.”

“Government-funded, unbiased sources including the NIH and CDC to ensure that the information is current and reliable”



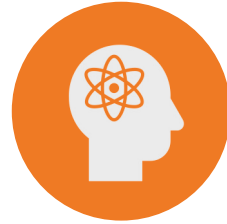
# Discussion

- Teachers may see connections between a viral pandemic and traditional curricular themes and standards
  - Ex: biology of viruses – viral structures and functions, replication, living vs. non-living, etc.

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  - Ex: biology of viruses – viral structures and functions, replication, living vs. non-living, etc.
- Our recommendation is to build student engagement by addressing issues that students are inherently interested in.
  - Ex: origin of COVID-19 and vaccines

# Implications



Recommend improving comprehensibility of COVID-19 information resources for students



Know where students acquire information about COVID-19 → support teachers as a student resource



Support student engagement in learning about COVID-19 which may encourage some students to further develop individual interest in science



Aid educators in the design of curricular materials about viral pandemics

# Next Steps

- Our research team is working on developing more instructional tools centered around viral pandemics
  - Address the questions and concerns raised by students from this study
  - Engage students in different types of modeling activities
- Currently analyzing data from the other multiple choice survey questions
  - Examining students' epistemic vigilance
  - What information about COVID-19 are students prioritizing and how is that related to the information sources they use?



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Ideas expressed in this material are those of the authors and do not necessarily reflect the views of the NSF.

## Coming soon!

Elsner, J.N., Sadler T.D., Zangori, L., Freidrichsen, P., Ke, L. (2022). Student interest, concerns, and information-seeking behaviors related to COVID-19. *Disciplinary and Interdisciplinary Science Education Research (DISER)*.



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# Questions?

You can find these slides on our website:  
<https://epiclearning.web.unc.edu/conference-papers/>

