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# The NERA Experience:

Reflections from first-time conference attendees  
January 11, 2024

The NERA team!

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# Hannah Smith



- Assistant Professor of Psychology at Assumption University
- Ph.D. in Learning Sciences & Technologies from Worcester Polytechnic Institute
- First attended NERA as a 2nd year graduate student in 2019
- NERA was my first conference presentation!
- Now a co-chair of the 2024 NERA conference

“An older graduate student brought me, and since then I make sure to bring new students with me every year!”

“NERA was such a welcoming, supportive, environment. I was so lucky to have my first conference presentation here! Attending NERA ignited my passion and excitement for education research! Now as a professor, it is great to be involved in NERA in a leadership role. There are always opportunities”



# Nellie Rushton



- Undergraduate Student at Stanford University
- First attended NERA as a high school junior
- Presented at NERA as a high school senior
- NERA was my first conference presentation!
- Now a student ambassador for NERA

“As my mentor, Hannah encouraged me to present a poster with her, and I’ve been involved with NERA ever since!”

“Sharing my teams’ work at NERA allowed me to receive feedback from new perspectives and feel confident in continuing to explore education research”

“NERA allowed me to form meaningful relationships with leaders in education research who still support me today!”



# Maddy Berube



- Research Assistant at the AIMS Center for Math and Science
- B.S. in Psychology from Fresno State University
- Attended NERA for the first time as a post-grad in 2023

“My NERA experience was so valuable because I was able to connect with so many professionals and students and hear advice on applying to graduate school and each person’s path”



## Stacy Shaw



- Assistant Professor
- Ph.D
- 1st NERA Attendance
- Attended NERA first as a faculty

“Academia is full of silos. NERA provided me a great opportunity to connect with local researchers and educators interested in education– people I probably would have never met without NERA.”



# Elena Silla



- Third-year graduate student at the University of Delaware
- Working towards Ph.D. in Education (Learning Sciences)
- 1st NERA Attendance in 2023

“NERA was a great opportunity for me to connect with other local scholars and learn about work that is happening in education. It also allowed me to serve as a discussant, which can be harder to do at larger conferences.”



# Avery Harrison Closser



- Postdoctoral Research Associate, Purdue University
- Learning Sciences & Technology
- 1st NERA Attendance in 2019

“I attended NERA as an early Ph.D. candidate. The community is so welcoming with so many ways to participate. I did the 3MT competition which really broadened my perspective on how to present my work and tell a compelling story about it!”



# Shelby Perry



- Adjunct Professor - New England Institute of Technology
- Master of Public Health from NEIT
- 1st NERA Attendance as a 1st year graduate student in 2021; served as NERA public health intern
- NERA was my first conference experience & presentation
- Social Media Coordinator for NERA

“My advisor brought me on as an intern, and I loved every part of it! I am so glad I stuck around to be a part of NERA and the team!”



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# The NERA Experience:

What makes NERA special

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# Supportive Environment






# Diverse Perspectives on Education Research





# Inclusive and Accessible to a Wide Range of Participants




**WPI**

Exploring Education Data Before and During the Pandemic

Hannah Smith, Claire Behning, Nellie Rushton, Fernanda Viamontes

*Learning Sciences & Technologies, Worcester Polytechnic Institute*



**Introduction**

**Problem:** The COVID-19 pandemic brought an unprecedented shift in teaching and learning, evidence that during the shutdown students made little progress when learning from home (Engvall et al., 2021), and spent less time learning (Garcia & Weiss, 2020).

**Context:** During the shutdown we saw a shift into using online learning tools as students moved to remote and virtual learning.

**Goal:** Explore performance on homework and practice problems prior to and during the covid-19 shutdown.

**Problem Types**

**A. Algebraic Expression**

☐ **1. Problem #194-120P "194-120P - 01479 - Find the Absolute..."**

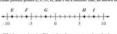
Use the distribution property to simplify.

$3(x - 2) + 4(x + 1) = 2x + 10$

Type your answer without any spaces and in standard form. Standard Form:  $ax + b = c$ . Make sure to write  $3x + 2$  as  $3x + 2$ .

**B. Check All That Apply**

Place plotted points A, B, C, D, and E on a number line, as shown below.



A. Which two points are three plotted opposite numbers that have a sum of 0?

☐ A ☐ B ☐ C ☐ D ☐ E

**C. Multiple Choice**

☐ **2. Problem #194-120P "194-120P - 01479 - Find the Absolute..."**

Use the distributive property to simplify.

$3(x - 2) + 4(x + 1) = 2x + 10$

Type your answer without any spaces and in standard form. Standard Form:  $ax + b = c$ . Make sure to write  $3x + 2$  as  $3x + 2$ .

**D. Number**

☐ **3. Problem #194-120P "194-120P - 01479 - Find the Absolute..."**

Use the distributive property to simplify.

$3(x - 2) + 4(x + 1) = 2x + 10$

Type your answer without any spaces and in standard form. Standard Form:  $ax + b = c$ . Make sure to write  $3x + 2$  as  $3x + 2$ .

**Results**

An ANOVA revealed a significant effect of problem type and of timeslugs ( $p < .05$ ).

Post hoc analyses indicated that the differences between each problem type were significant. ( $p < .05$ )

Students performed significantly better during the COVID-19 shutdown than prior to the shutdown. ( $p < .05$ )

We found no time X problem type interaction ( $p > .05$ )

**Study Environment & Data**

**Environment:** ASSISTments, a problem-based online problem-solving platform, in which students solve traditional textbook problems and receive immediate correctness feedback on their answers.

**Data:** dataset covers all problems solved in the ASSISTments for the 2019-2020 school year.

<https://osf.io/q7ncf/>

**Research Questions**

- Which problem type has the **highest percentage** of correct answers?
- Do students get **more problems correct** prior to or during the covid-19 shutdown?

**Discussion**

- The evidence that students performed better during the shutdown, is extremely promising, as the shutdown was expected to negatively impact student performance.
- While this study only used data from one online problem solving platform, the results still shed a positive light into how students answered problems during a novel and mainly negative experience.

**Limitations & Future Research**

- This study showed that students actually improved in their correctness when solving problems from home without this direct observation. This is reminiscent of the *asynchronous* and the *asynchronous* learning environments.





# Welcoming Community





# Fun!





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# Questions & Comments?

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