

BEEC Share and Learn Report: April 2024

Presenters: Lead: Julie Karand, University of Delaware; Richard Goldberg, University of North Carolina Chapel Hill

Topic: ASEE Education Showcase Deep Dive: Classroom Activities

Resources:

BEEC Share and Learn Jamboard for Session:

<https://jamboard.google.com/d/1b5TYM9HPEmcrbh24oTdJ7GhKnzV69RoSQItMWwysnns/viewer?pli=1&f=0>

KEEN: <https://engineeringunleashed.com/>

KEEN Micromoments: <https://engineeringunleashed.com/micromoments>

Panel Discussion and Lecture:

Topic One: Micromoments in the Classroom

- 1) What challenges do you face in implementing new ideas of activities into your classes?
 - a. Lack of funds, management of recording activity, testing it out beforehand, unexpected outcomes, students attitude towards the unknown, students “shortcutting” the activity, executing the plan accurately
- 2) A “Micromoment”: a small-scale activity that can be implemented in 2-30 minutes in the classroom
 - a. Developed through KEEN program
 - b. Allows engagement and see results immediately over larger scale 3-week long projects or activities
- 3) Why use micromoments?
 - a. Less planning time, easy to implement, promote faculty motivation, improve student learning, develop faculty self-efficacy in pedagogical approaches
- 4) Micromoment Framework
 - a. Why do you want to incorporate a micromoment?
 - b. What concepts are you trying to teach?
 - c. Plan your activity
 - d. Develop your assessment
 - i. Peer review, number of posts, etc.
 - ii. Or No assessment at all 😊
- 5) Potential Activity:
 - a. Compare pros and cons of temperature sensor types – identify 3-5 features of technology, list 3-5 examples (eg type of battery motor), ask students to select attribute from each column to create a product. Highlight final selections
 - b. Total Time: 15 minutes
- 6) Brainstorm some ideas on a new micromoment to implement in your class
 - a. Ethical and social issue may arise from this technology, stats – relate to recent news articles, physiology class – what diseases may relate to today’s topic, design – draw out who would use the device you just designed, thermo- ask them to analyze an everyday phenomena (e.g. clouds) in terms of thermodynamics concepts (e.g. adiabatic expansion)
 - b. Question was how to use these – can replace a slide altogether

Topic 2: Informational Comedy in 510K Discussion

- 1) 2 minute clip of John Oliver’s Last Week Tonight Episode on 510K process
- 2) Prompts in class discussion on student roles (marketing, finance, patient advocate, quality control), Jigsaw pairing – first plan by role, then distribute into one pro status quo and one con (make a change) team (original 3

student team then have them change to new groupings of 4), Individual reflection assignment with journal article on Morcellation Debate Paper

- 3) What media sources could be used to inspire classroom activities?
 - a. Front page of newspaper today, Vox Bad Doors video, Netflix Documentary “The Bleeding Edge”, newspaper articles about recalls or other issues with medical devices, Science Versus podcast, How I Built This podcast, “What’s Your Problem” podcast, social media posts on ethics of how data is interpreted and shared, STEM TikTok
 - b. Bleeding Edge to use what the FDA is doing and what they should do to be compliant with the FDA and what would be an improvement in the situation
 - c. Doesn’t always have to be controversial – e.g. small 30 second clips of demos you can’t run in class
 - d. Introducing media sources – start with it as extra credit and have them watch it with reflection piece and see what works and doesn’t work and if it fails it’s okay, then scale up as it’s working