



# Playful Rehearsal

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# Committee of N

## KNOWLEDGE CENTERED

*"There approaches curricula with unders se*

## (SOCIAL) CONSTRUCTIVISM

*"Children have real only of that which themselves, and each try to teach them so quickly, we keep reinventing it the*

## LIFE ADJUSTMENT & PURPOSE

*"For education in the Century of the Child aims at nothing less than the production of individuality through the integration of experience."*

*-Harold Rugg  
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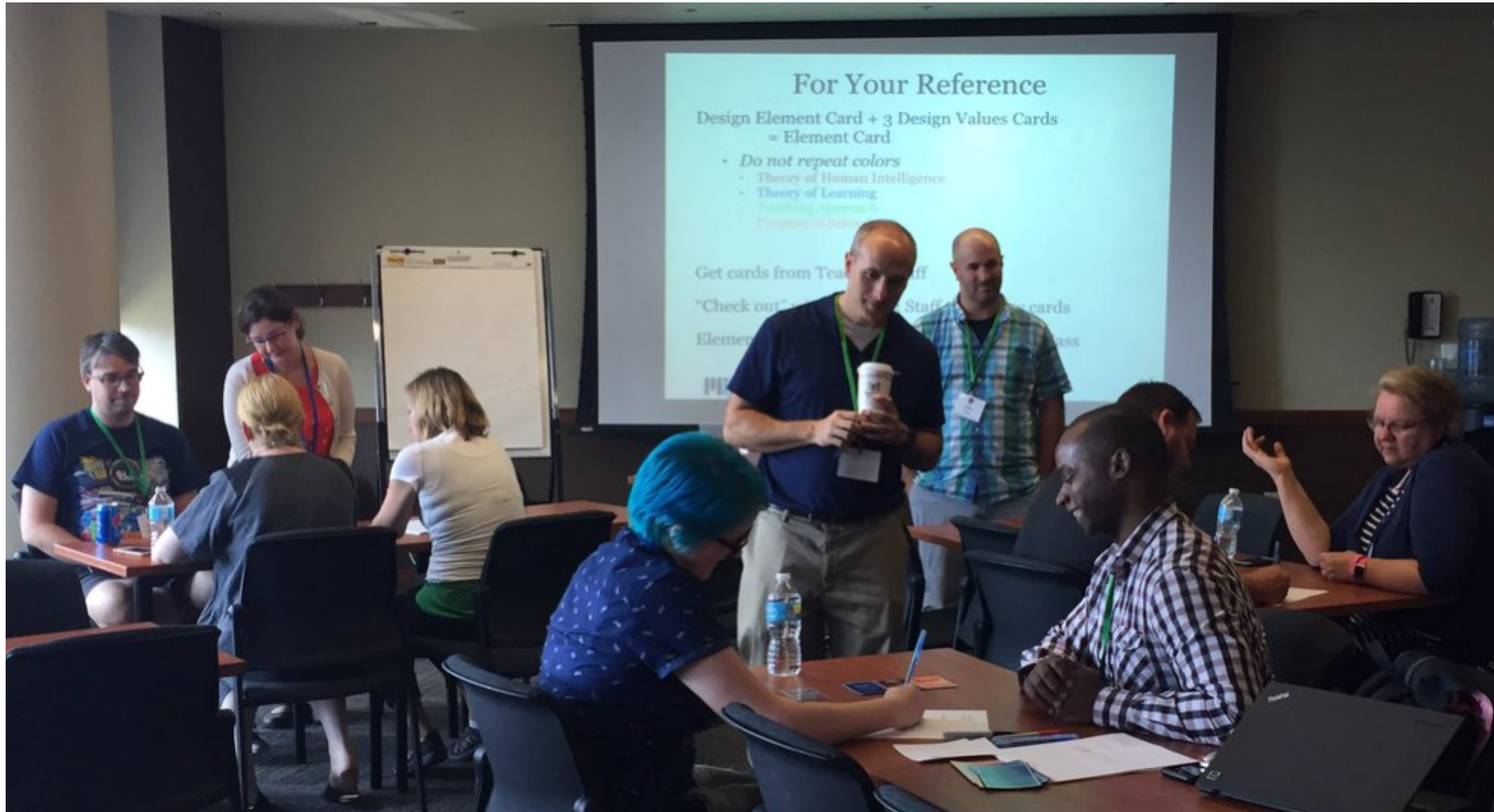
## SCHEDULE

*"The degree to which today's American school is controlled by the dynamics of clock and calendar is surprising..."*  
*-Milton Goldberg*





# Committee of N





# TEACHING SYSTEMS LAB

We investigate the complex technology-rich  
classrooms of the future  
And the systems we need to help educators  
thrive in those settings





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Microsoft



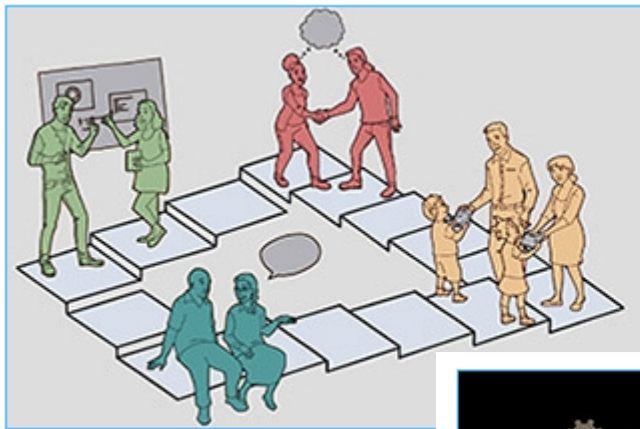


# TEACHING SYSTEMS LAB

Explore the intersections between online  
learning and teacher education



## Explore the intersections between online learning and teacher education



### Launching Innovation in Schools

Become a change leader and take the first step in launching instructional improvement initiatives in schools to improve teaching and learning.



### Design Thinking for Leading and Learning

A hands-on course for education leaders to learn about design thinking and explore how it can transform classroom learning and school communities.



# TEACHING SYSTEMS LAB

Explore the intersections between online  
learning and teacher education  
“See the future first” and imagine the K-12  
systems that prepare for it







# TEACHING SYSTEMS LAB

Explore the intersections between online learning and teacher education

“See the future first” and imagine the K-12 systems that prepare for it

**Create practice spaces for teachers to rehearse for & reflect on important decisions in teaching**

*“We conclude that, in the program we studied, prospective teachers have fewer opportunities to engage in approximations that focus on contingent, interactive practice than do novices in the other two professions we studied.” - Grossman et al. (2009)*



# TEACHING SYSTEMS LAB

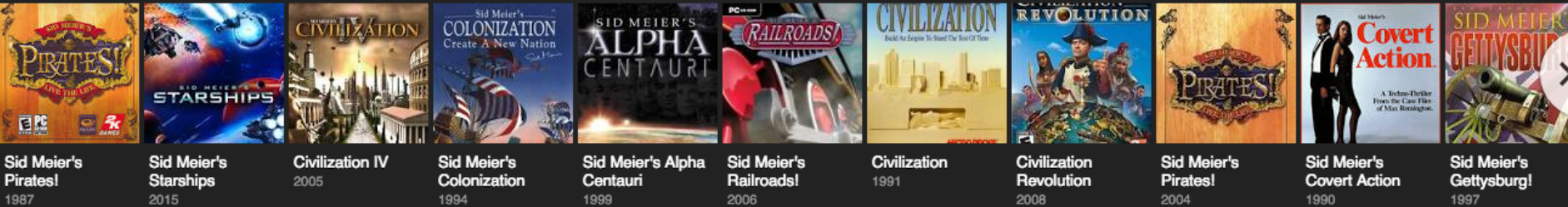


Elizabeth Self, a doctoral student at Vanderbilt University, monitors a clinical simulation that she designed to help preservice teachers develop cultural sensitivity. As part of the simulations, education students work with actors who play the roles of students or parents. The interactions are recorded and can be viewed in real time from another room.

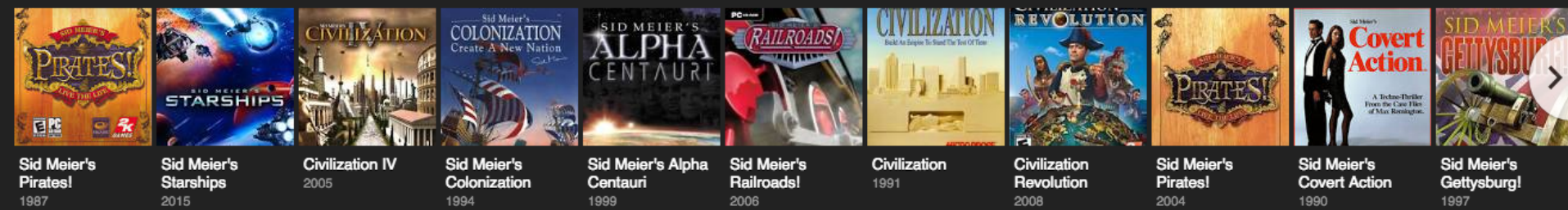
—Joe Buglewicz for Education Week





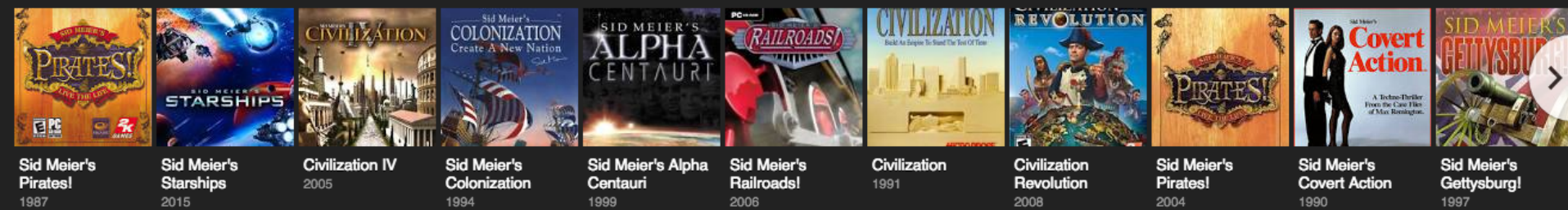


“Games are a series of interesting decisions” - Sid Meier



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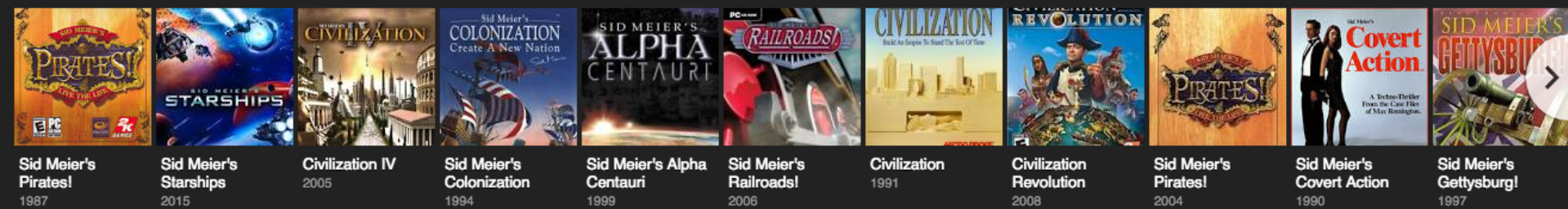




“Games are a series of interesting decisions” - Sid Meier







“Games are a series of interesting decisions” - Sid Meier







# TEACHING SYSTEMS LAB

For example, the math problem:

$$\textcircled{3} \frac{1}{2} + \frac{3}{8} = \frac{3\frac{1}{2}}{4}$$
$$\frac{1}{2} + \frac{2}{8} = \frac{3}{4} + \frac{1}{8} = \frac{3\frac{1}{2}}{4}$$

(Blank Student Work Card)

$$\frac{1}{2} + \frac{2}{8} = \frac{3}{4} + \frac{1}{8} = \frac{3\frac{1}{2}}{4}$$

The "Real Student" copies the mistake and writes a rational.

(Blank Student Work Card)

$$\frac{1}{2} + \frac{3}{8} = \frac{4}{10}$$

Rationale:

$$1 + 3 = 4$$
$$2 + 8 = 10$$

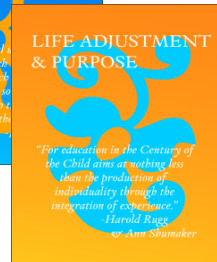
The "Bluffers" invent their own mistakes and give rationals.

(Blank Student Work Card)

$$\frac{1}{2} + \frac{3}{8} = \frac{5}{8}$$
$$2 \times 3 = 6 \rightarrow \frac{6}{8}$$
$$1 \times 8 = 8 \rightarrow \frac{6}{8}$$

Rationale:

The student got confused between cross-multiplying and used it for adding fractions.



## Teacher Moments

Speak directly to the student.

**RECORD**

Woodrow Wilson Playtest

Teacher: Teacher: Hello, class! Today we are going to think about an important topic in biology. We are going to think about change, specifically

→ How change happens in an organism

We did a true false quiz on this topic, so I have some ideas about what you think. Today we're going to explore this very important concept more thoroughly.

Teacher: So, let's start with change in bacteria. Bacteria are biotic, and antibiotics are supposed to kill the bacteria that make you sick so you can recover more quickly. However, sometimes bacteria "change" so that antibiotics don't work any more. These four characters (see cartoon on left) each have an opinion about how bacteria change.

Teacher: Please share with the class two things Who do you agree with on this slide (a, b, c, or d) Why do you agree with that person's idea? Please explain in a few words.

Please not use the Google Doc functions to add comments or images. Only teachers can scroll the drawing panel.

**Faces**

**Teacher**

**Alex**

**Casey**

**Ricki**

**Sam**

How to participate

1. Read all of the conversation on the far right.
2. Make sure you scroll to the bottom of the conversation.
3. Select your character's name and type new text in the chat window.
4. Type Enter or click "Chat" to add your thoughts to the conversation.

How to select different facial expressions

Double-click your character's face on the right and scroll through the pop-up menu.

Select your character:

Select your character, then type in your chat in the field above.

**Chat**

### Mike Bilson

- 7th grade Male
- African American
- Plays in a band, sings in the school chorus
- A in 6th grade science, A in 6th grade math

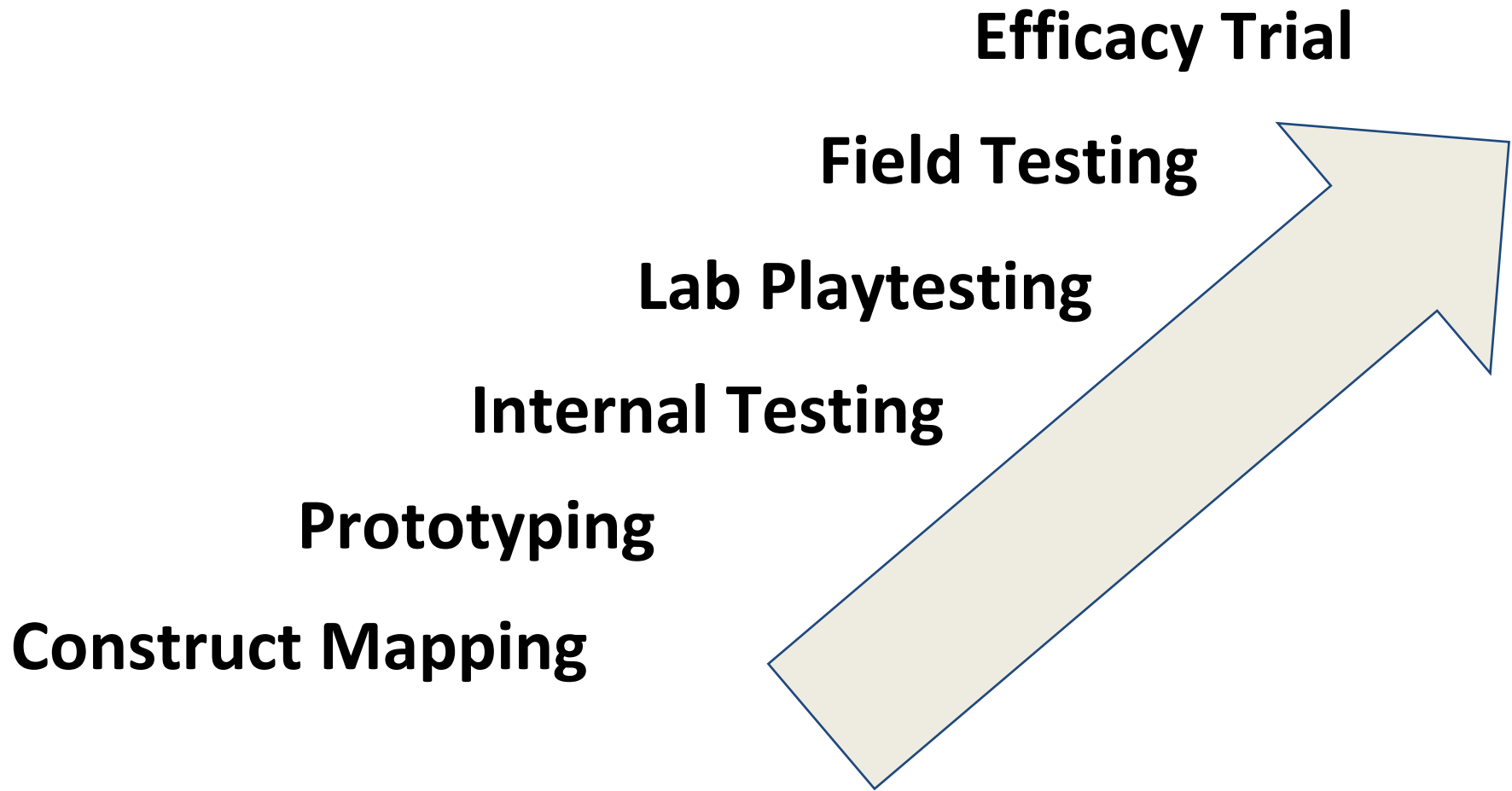
### Scenario

Student gives a presentation to the class and they stumble while presenting, stopping and restarting a few times

Principle	Principle
<p><b>Persist through challenges to grow</b></p>	<p><b>Learning should feel like play</b></p>



# Design Based Research













*MIT's Teaching Systems Lab invites  
teachers, student teachers, and  
education professionals to:*

# DINE AND PLAY!

*We invite you play test our new  
interactive tools for teachers. You  
will try out our games and let us  
know what you like and didn't like.*

Your participation in these playtests is  
important to us and we value your  
honest feedback. Your insights help us  
to improve these games.

---

WEDNESDAY, DECEMBER 7TH

4:30-7:30PM

MIT, BUILDING NE49  
600 TECHNOLOGY SQUARE

RSVP HERE

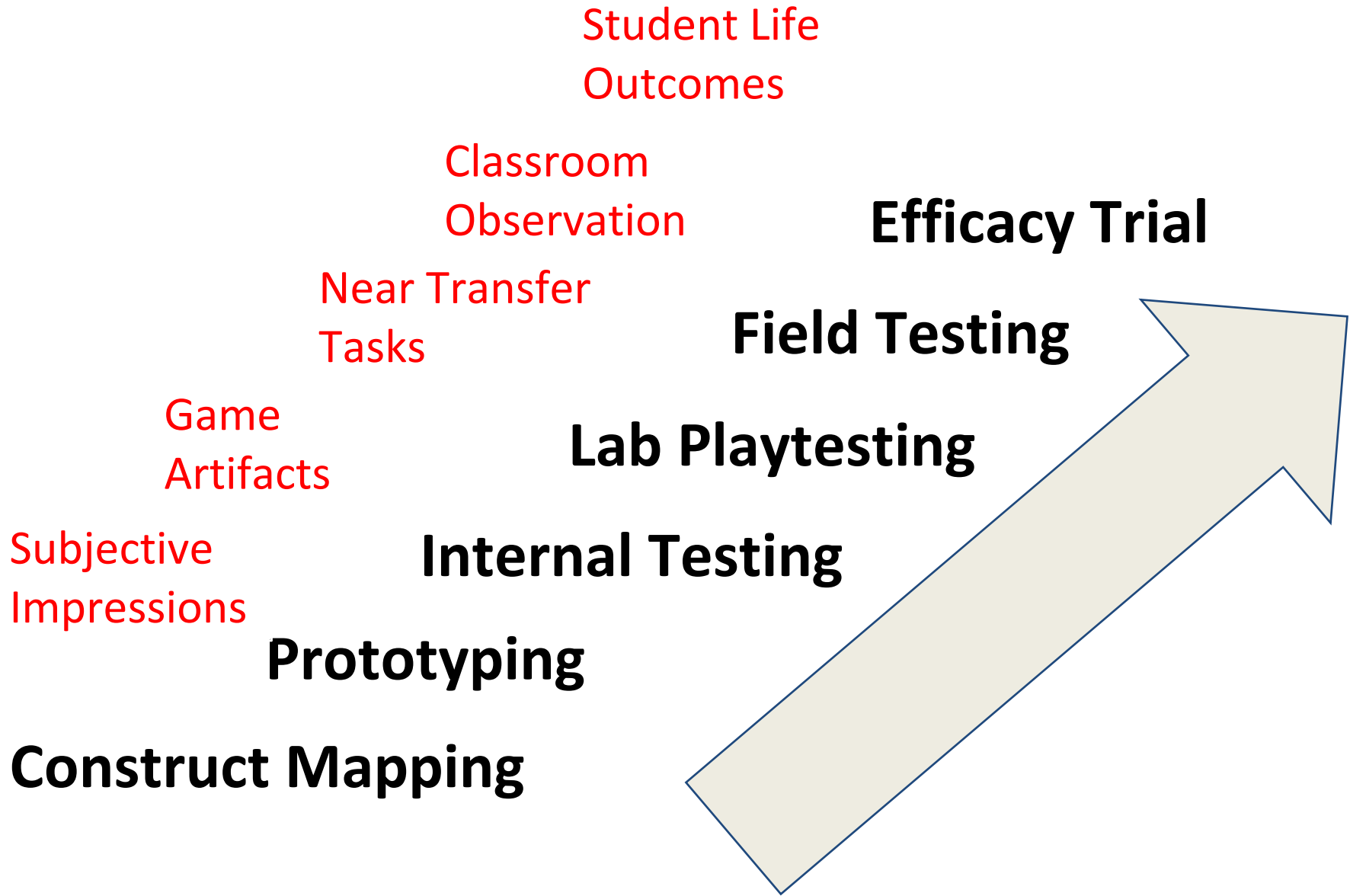
Questions? Email SJ at [svaughan@mit.edu](mailto:svaughan@mit.edu)





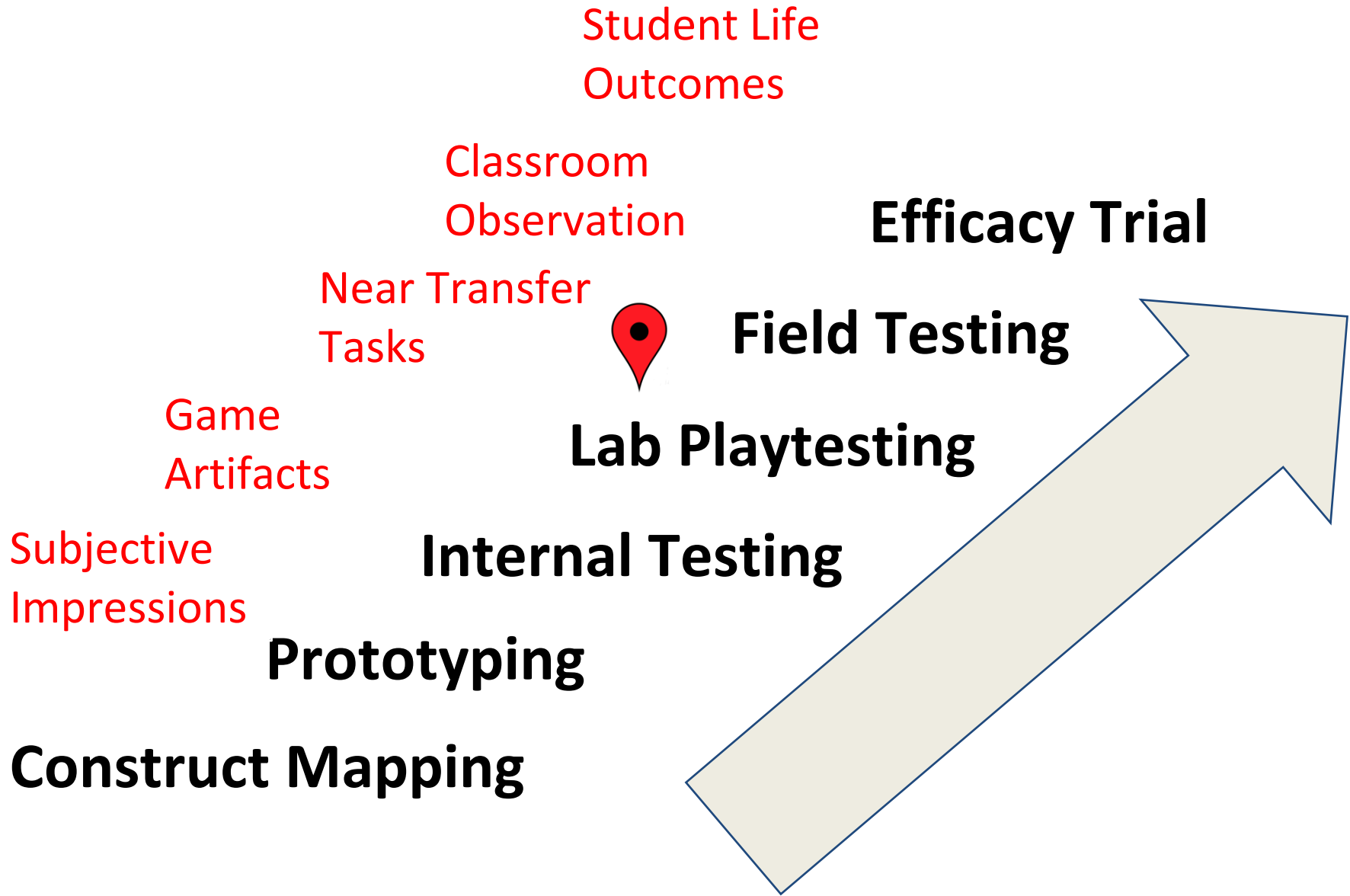


# Design-Based Research





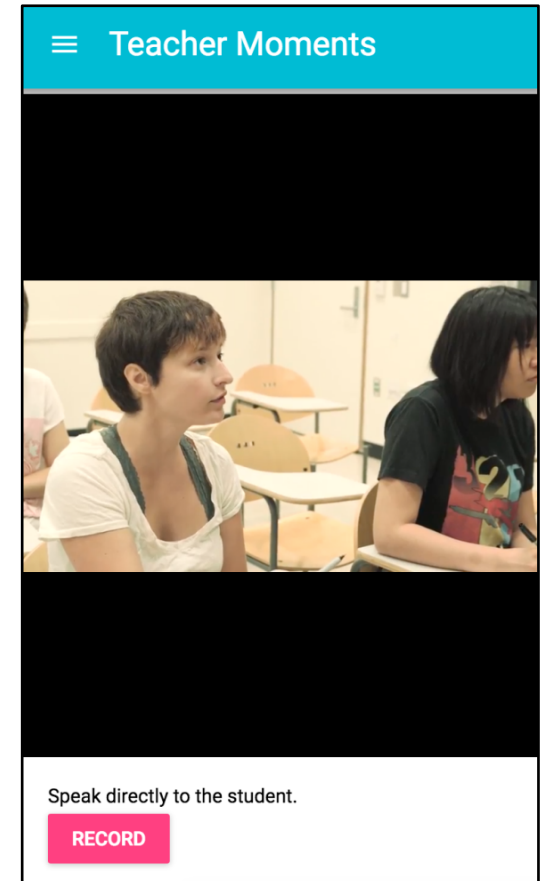
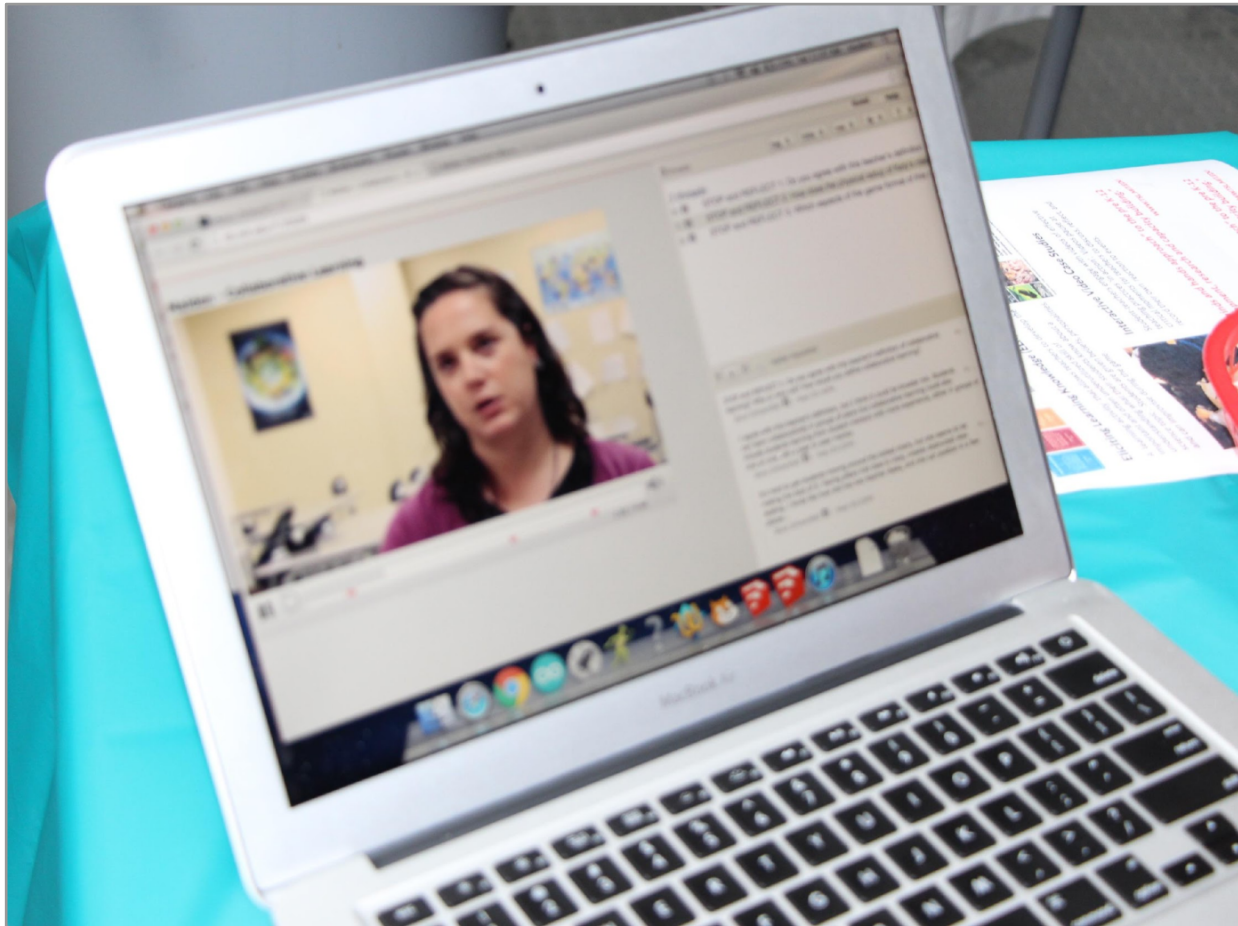
# Design-Based Research







# Teacher Moments, MICS





# TEACHING SYSTEMS LAB



Elizabeth Self, a doctoral student at Vanderbilt University, monitors a clinical simulation that she designed to help preservice teachers develop cultural sensitivity. As part of the simulations, education students work with actors who play the roles of students or parents. The interactions are recorded and can be viewed in real time from another room.

—Joe Buglewicz for Education Week





# Teacher Moments, MICS

## Teacher Moments

Imagine in the context of the lesson plan you developed for this challenge, you pause and ask the whole class if they have anything they want to check their understanding on or clarify. Maia asks "How can plants be breathing, you don't see them inhaling and exhaling, and you don't see their breath in the cold?"

### Maia

7th grade female, Caucasian  
Discipline report  
In theater and loves art  
Single mom, two older sisters

Speak directly to the student

SAVE RESPONSE

7s

✓

Ada, take a look at your data. Do you notice any patterns?  
32 seconds

I hear that you are frustrated, I know what that's like to get frustrated when working on a problem. Let's look at these mistakes and find where your good thinking is

254 seconds

Give specific, helpful and kind feedback.

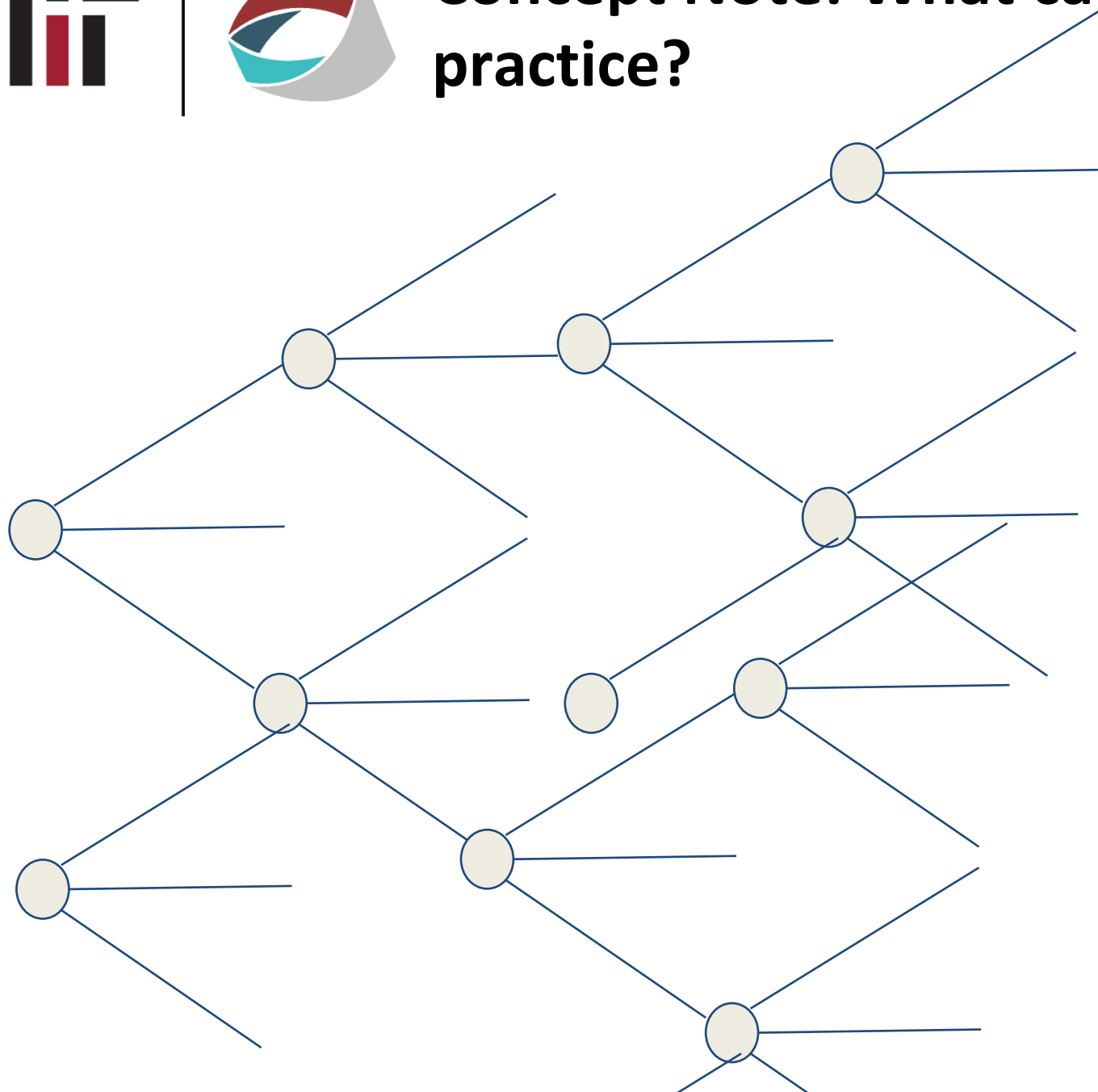
Good idea, but too directive for inquiry phase

SEND

CANCEL



# Concept Note: What can we practice?





# Students yelling 'cotton picker,' heiling Hitler at this local school



By Sara K. Satullo | For [lehighvalleylive.com](http://lehighvalleylive.com)

[Email the author](#) | [Follow on Twitter](#)

on November 08, 2016 at 7:15 AM, updated November 08, 2016 at 4:38 PM

Print

Email

[Southern Lehigh High School](#) students have been subjected to classmates yelling gay slurs and the n-word in the halls, calling black students cotton pickers and using heil Hitler salutes.



Southern Lehigh High School in Upper Saucon Township is seen March 23, 2016. (Kurt Bresswein | For [lehighvalleylive.com](http://lehighvalleylive.com))

That's according to students and a letter high school Principal Christine Siegfried sent home to families following a special assembly on Wednesday, where the principal urged the study body to treat classmates with respect.

District Superintendent Kathleen Evison emphasized Friday that only a small number of students used the "extremely inappropriate language" and they have been

disciplined.

"Our student body is an extremely supportive and collaborative student body," Evison said. "This is very unusual for us to hear this kind of language and, obviously, very disturbing."

## MOST READ



Students yelling 'cotton picker,' heiling Hitler at this local school



Pa. election results 2016: U.S. Senate, Attorney General, Congress



Police seize heroin, cocaine in Palmer Township raid



Warren County real-time election results 2016

Shaun King Retweeted



**Shaun King** @ShaunKing · 17h

This happened at a high school in Minnesota today. DAY 1 of Trump.

Donald J. Trump and Donald Trump Jr.



11K 6.2K



Shaun King @ShaunKing · 3h

High School in Central FL.

"Y'all black people better start picking your slave numbers. KKK 4 Life. Go Trump."



2.1K



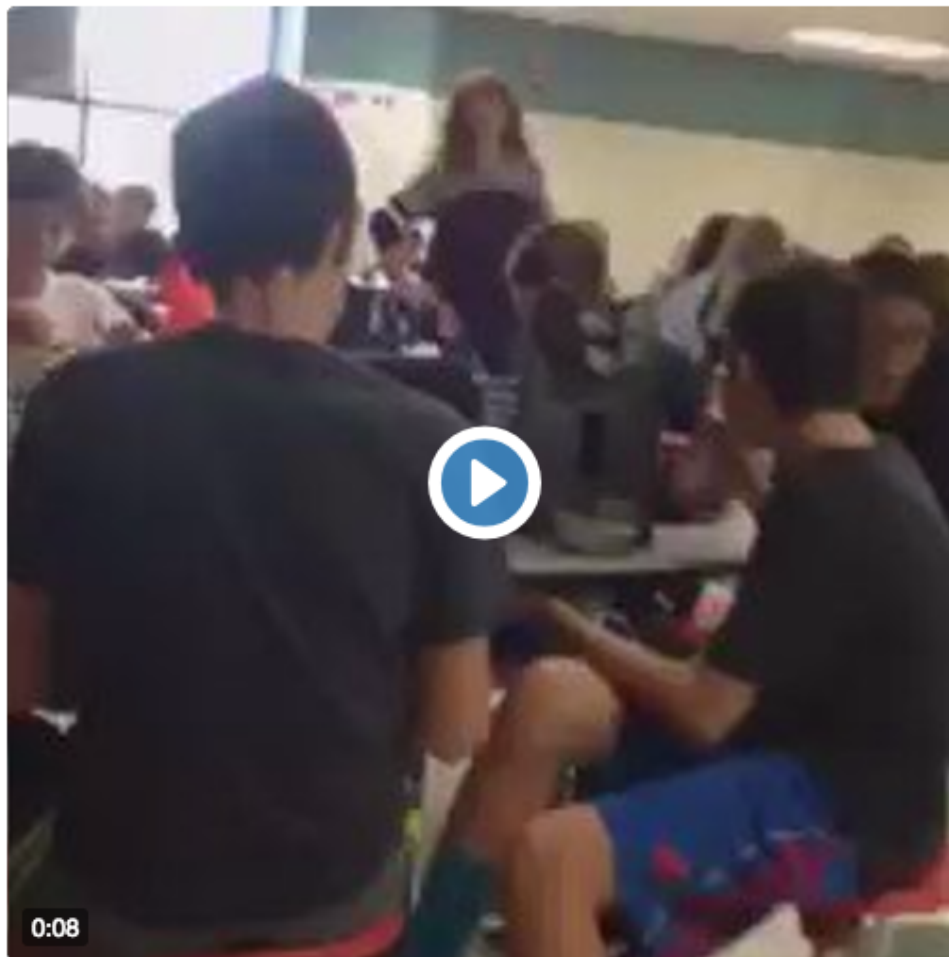
961





**Shaun King** @ShaunKing · 4h

Yesterday during lunch at Royal Oak Middle School in Royal Oak Michigan, white students loudly chanted BUILD THE WALL, BUILD THE WALL.



**Build the wall, build the wall chanted at a Michigan middle school**

This was on DAY ONE after Trump was elected President.



4.4K



2.1K







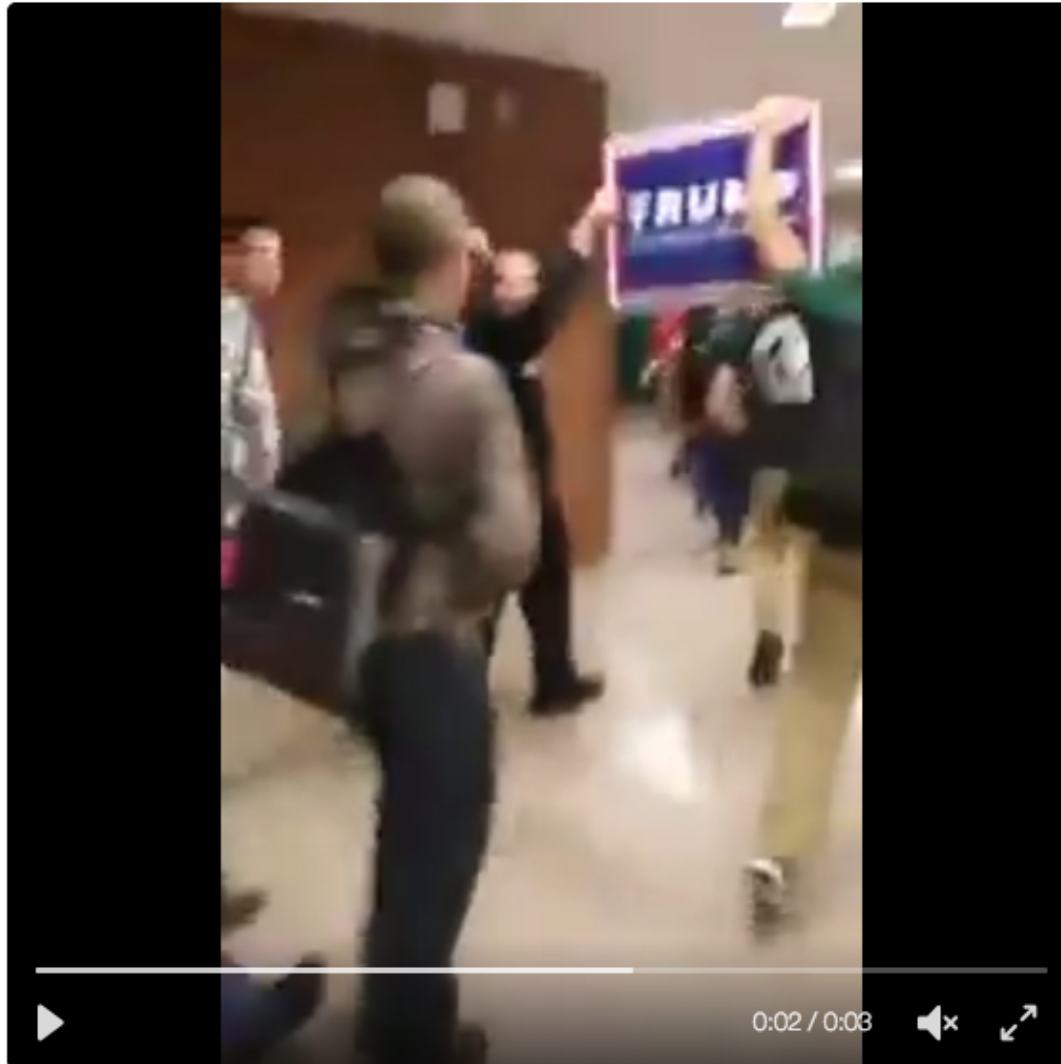
**Shaun King** ✓

@ShaunKing



 Follow

1. At York Tech High School in PA white students literally walked down the hall chanting "white power" while holding Donald Trump signs.





Here's a game that I had a lot of fun playing with people at [#tmcnyc16](https://twitter.com/tmcnyc16).  
[mathmistakes.org/baldermath/](http://mathmistakes.org/baldermath/)



@eappleton



#tmcnyc16 So, which one is the real student work?

[pic.twitter.com/8Jwj6zVFxE](https://pic.twitter.com/8Jwj6zVFxE)

2:53 PM - 17 Aug 2016

[illegible]

For example, the math problem:

3.  $\frac{1}{2} + \frac{3}{8} = \frac{3\frac{1}{4}}{4}$  ✓

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[Blank Student Work Card]

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$\frac{1}{2} + \frac{3}{8} = \frac{4}{10}$

Rationale:

$1 + 3 = 4$

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3

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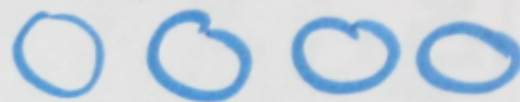


# BalderMath

If 8 people share 44 crackers equally, how many crackers does each person get?

5.8

5 and  $\frac{1}{2}$



---  
Rationale:

Correctly figured out that each kid gets 5 whole. Now some crackers were left over. 8 people so divide remaining crackers into 8



# Concept Note: When is play?

**Authenticity**

**Abstraction**



**Tasks**

**Simulation**

**Games**



# Committee of N

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*"Children have real only of that which themselves, and each try to teach them so quickly, we keep reinventing it the*

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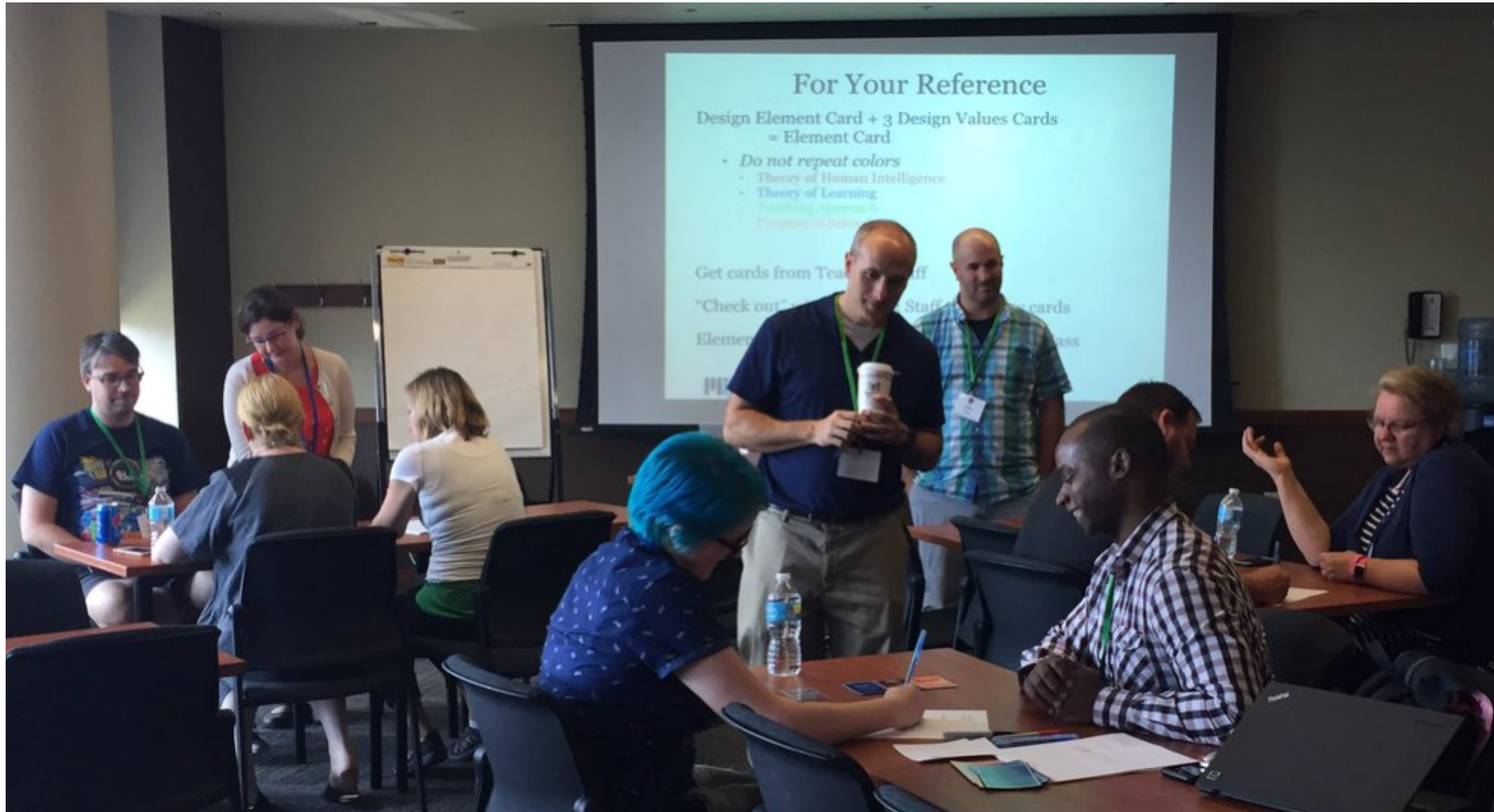
## SCHEDULE

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*-Milton Goldberg*





# Committee of N





# Eliciting Learner Knowledge

Actions

Woodrow Wilson Playtest

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→ How change happens

We did a true false quiz on you think. Today we're going to go more thoroughly.

Teacher: So, let's start with antibiotics are supposed to can recover more quickly. However, sometimes bacteria any more. These four characters opinion about how bacteria

Teacher: Please share with Who do you agree with or Why do you agree with the words.

Please not use the Google Doc functions to add comments or images.  
Only teachers can edit the drawing panel.

**How to participate**

1. Read all of the conversation on the far right.
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**How to select different facial expressions**

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Select your character:

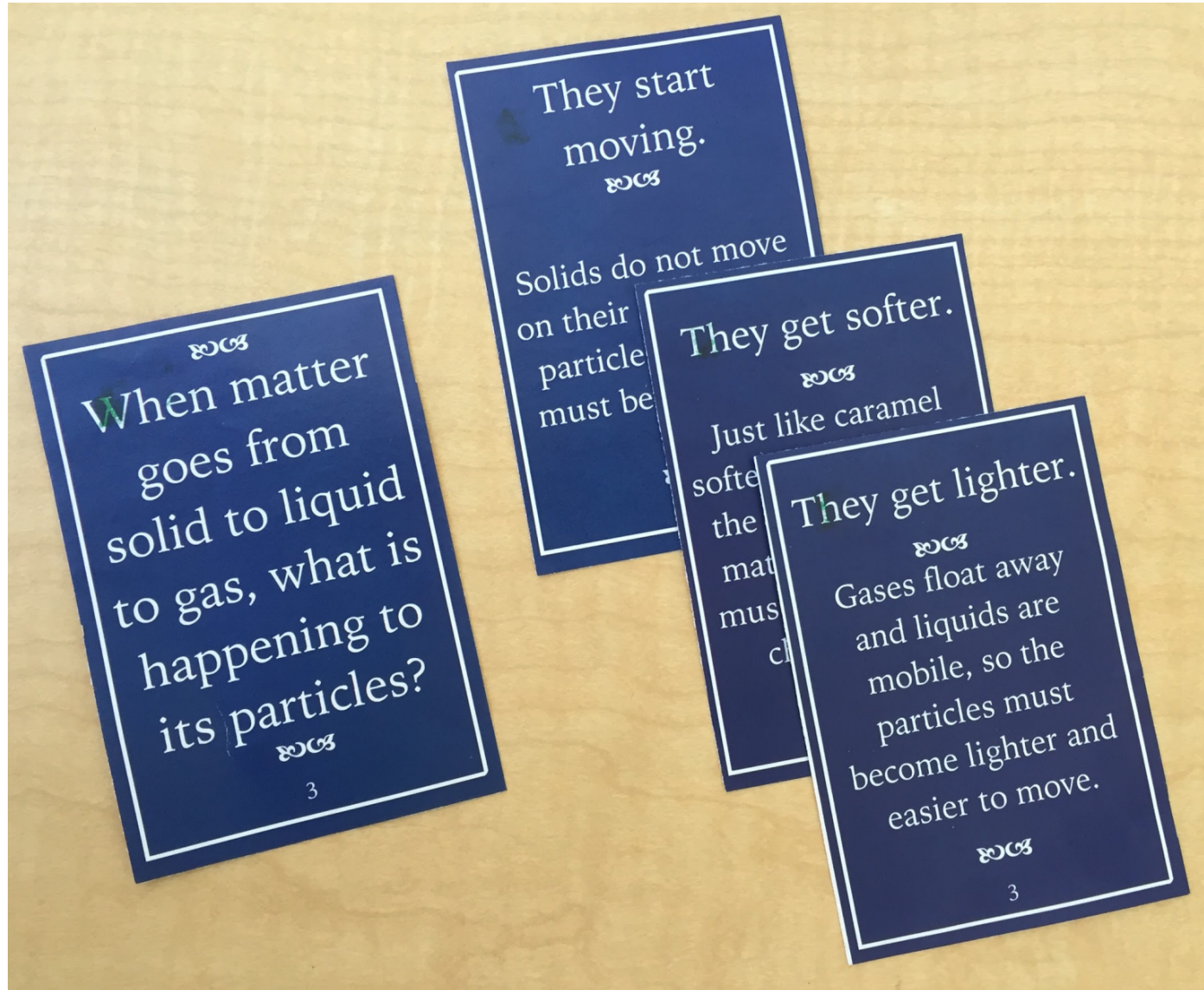
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# Eliciting Learner Knowledge



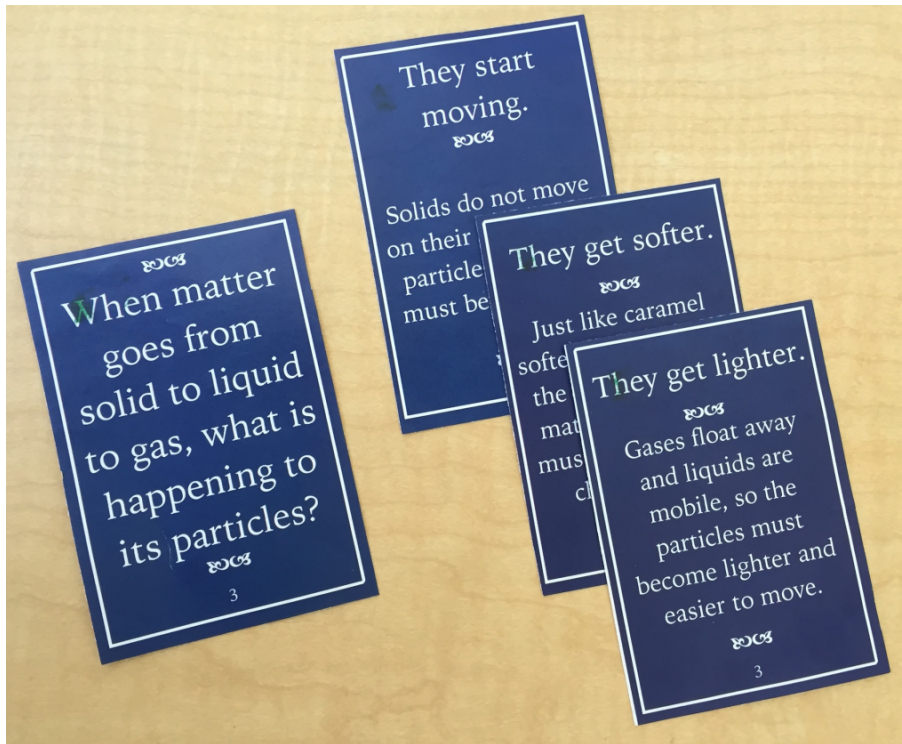




# Concept Note: Cards

## Cards:

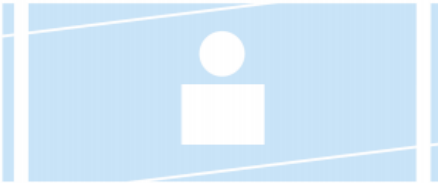
- Make information salient
- Constrain choice
- Shift from recall to recognition
- Standardize experience
- Set expectations



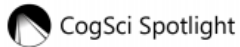


# Motivation Station

## Mike Bilson



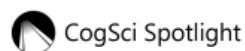
- 7th grade Male
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## Scenario



Student gives a presentation to the class and they stumble while presenting, stopping and restarting a few times





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## Principle



***Persist through challenges to grow***

## Principle



***Learning should feel like play***



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## Scenario



Student gives a presentation to the class and they stumble while presenting, stopping and restarting a few times

## RAP BATTLE (Challenge)









## But does it work?

- Overall: Shifting thinking from “Was that a good 15 minutes” to “Was that a good fifteen seconds?”
- ELK/Baldermath: Empathizing with students and learners
- TeacherMoments/MICS: Rehearse teaching moves in low-stakes, high-intensity settings
- Committee of N/Baldermath: Deploy useful heuristics after game play experience (sometimes long after)
- Committee of N: Motivate learning content knowledge for effective game play
- Baldermath: Adopt practices in game play that usually take extensive facilitation
- Overall: Develop teacher imagination for how games could be used in classrooms



# Teacher Education Practice Fellows



**Come Play with Us?**  
**[jreich@mit.edu](mailto:jreich@mit.edu)**





Teaching Systems Lab

@mit\_tsl



Following

This is what happens after a Fun Friday @mit\_tsl

