



# Beyond a Digital Divide: Engineered Inequality and Rethinking Our Relationship to Technology

Jared O'Leary  
BootUp PD

# How to reach the resources

- Direct link is in the chat
- [www.JaredOLEary.com](http://www.JaredOLEary.com)
  - Presentations
    - Beyond a Digital Divide: Engineered Inequality and Rethinking Our Relationship to Technology

# Essential questions

- ▶ How do we ensure the role of arts and sciences remains part of the teacher preparation process and the experiences in K-12 schools?
- ▶ How do we more intentionally situate the role of arts and sciences in colleges of education and K-12 schools?

# What's the plan?

- Who am I?
- Beyond a digital divide
- What is engineered inequality?
- Rethinking our relationship to technology
- Exploring resources and examples
- Let's talk and continue to reflect



## Who am I?

- ▶ All grades K-18+
- ▶ Experience in both music education and computer science education
- ▶ Director of Education & Research at [BootUp PD](#)
- ▶ [Link to my CV is on my website](#)

# Beyond a digital divide

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# K-8 Technology -> Coding

# Is this equitable?



# Does this close the digital divide?

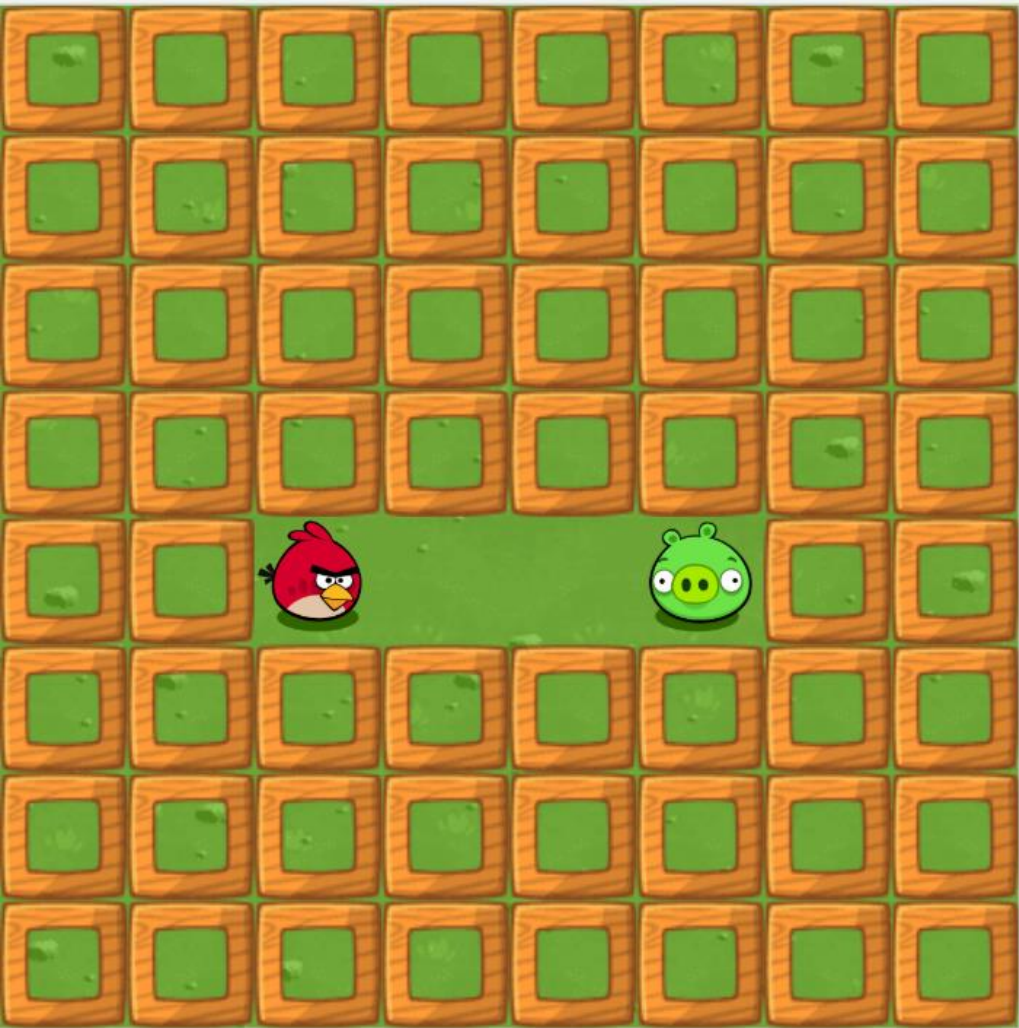
# Maybe

# What is engineered inequality?



## Some examples

- ▶ **Short video:** [Why left-handers can't use right-handed scissors](#)
- ▶ **Short video:** [This 'Racist soap dispenser' at Facebook office does not work for black people](#)
- ▶ **Short article:** ['The Computer Got It Wrong': How Facial Recognition Led To False Arrest Of Black Man](#)
- ▶ **Longer article:** [Racist in the machine: The disturbing implications of algorithmic bias](#)
- ▶ **Book:** [Algorithms of Oppression: How Search Engines Reinforce Racism](#)



## Instructions



This pig is ruffling my feathers. Help me to find him!

## Blocks

Workspace: 2 / 4 blocks

move forward

turn left ↶ ▾

turn right ↷ ▾

when run

move forward



Run

79 **H**

L crush is the R's release

*f* R l l r r L r L R l l r r L R L r r l R l R l R l l r L R l l r r L r l l R l

84

r r L L R l R<sup>3</sup> l r r l R R l r r L r R l L r R R l R L R l l r L r R l L

89 **I**

L r R l r r L l R l r r L l r r l R l l R L r L L R l r r l l R L r r l l

93

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97

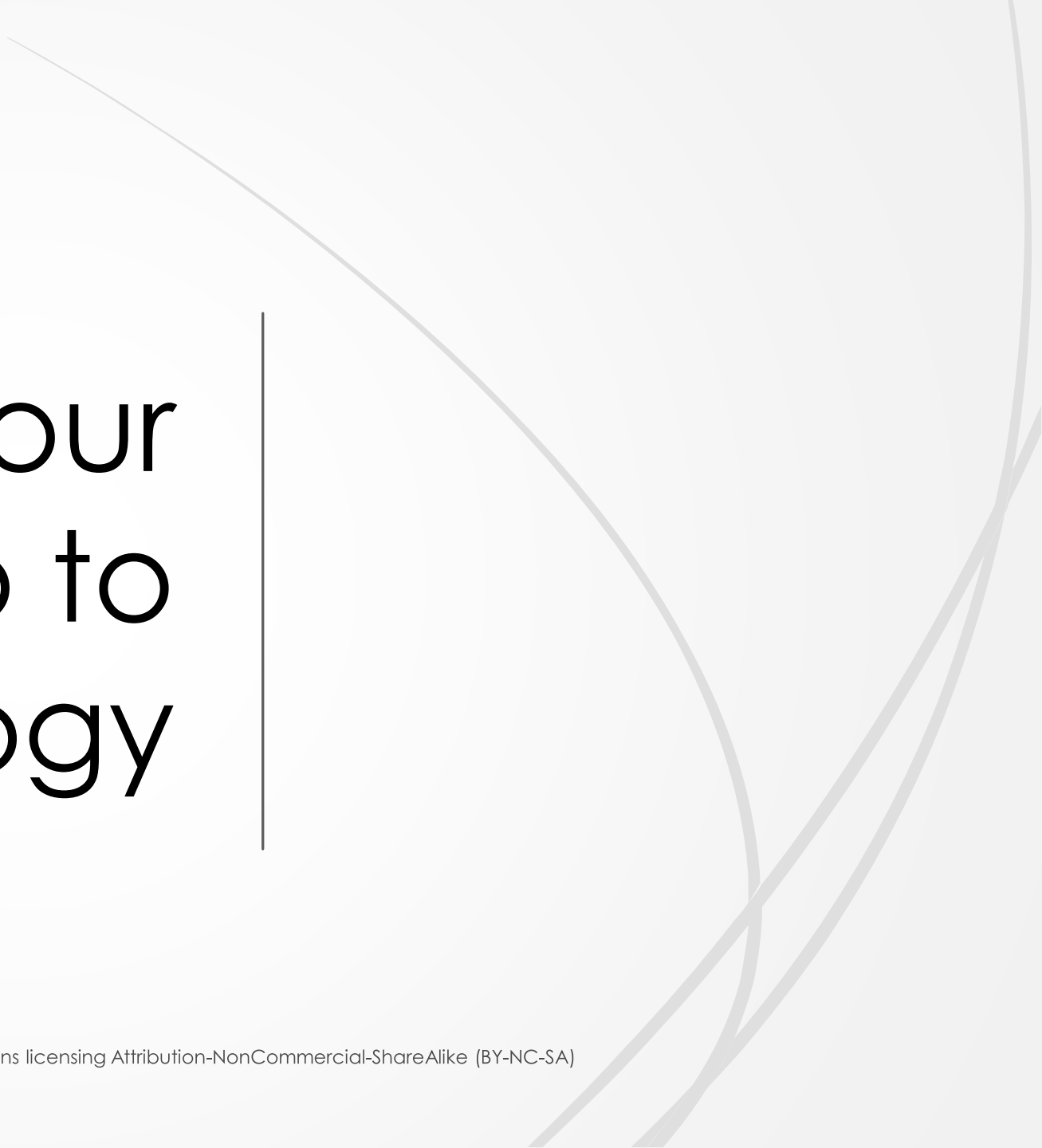
all pings

**J**

R l l r r L r r l l R l R l R L R L r r l r L r r L

STEM -> STEAM?

# Rethinking our relationship to technology



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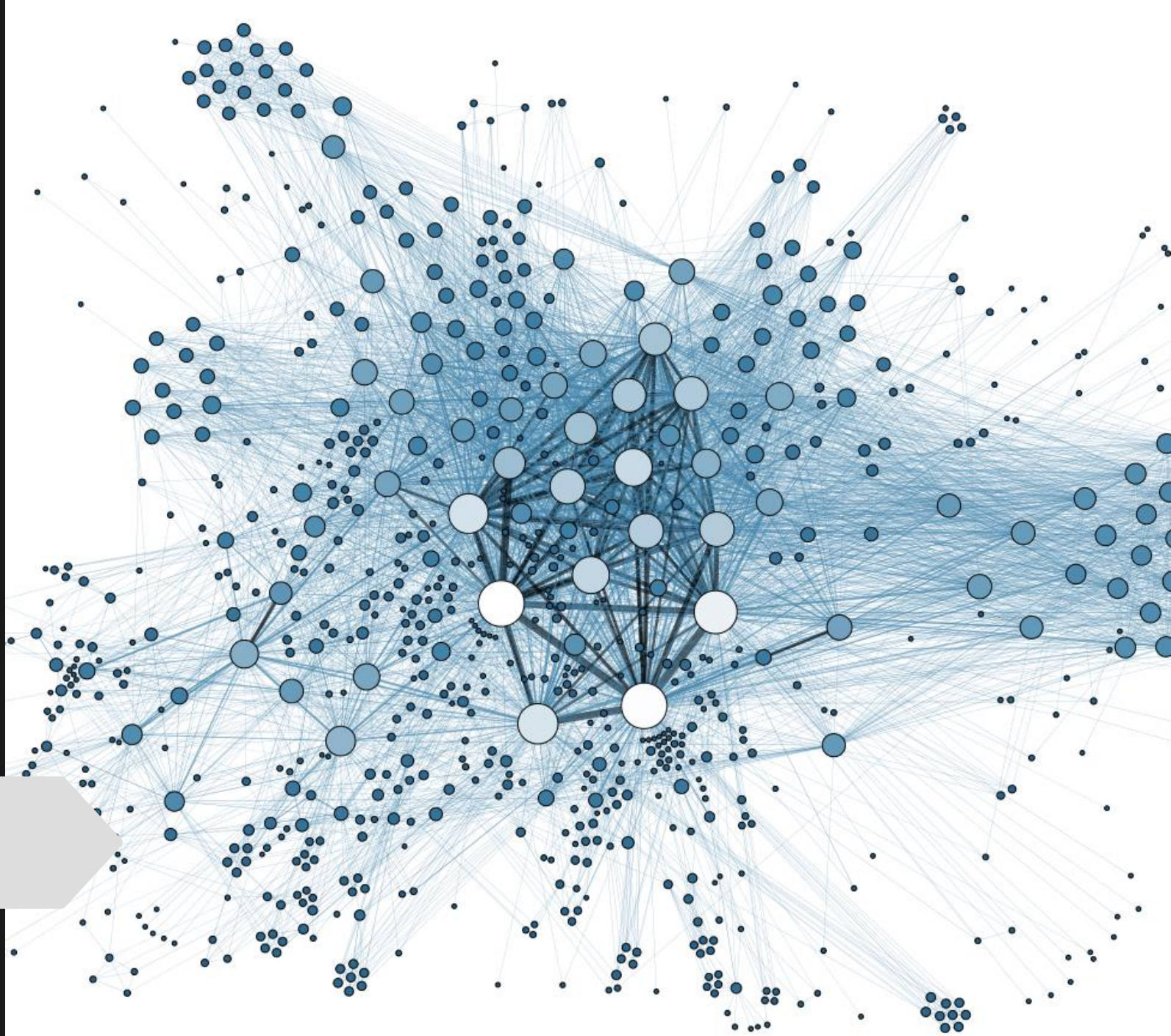
# Sequential Design

Step 1

Step 2

Step 3

# Rhizomatic Design



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Interconnected  
practices from  
my dissertation

- Composition practices
- Performance practices
- Maker practices
- Coding practices
- Entrepreneurial practices
- Visual art practices
- Community practices



Music-related  
hardware  
practices

- **Video:** [I Turned a 1920's Typewriter into an EDM Drum Machine](#)
- **Video:** [Music Machines at Scratch Day MIT](#)
- **Video:** [BEAT JAZZ by ONYX ASHANTI](#)
- **Images:** [Hardware modifications shared within my dissertation](#)
- **Playlist:** [Hardware practices](#)

# Exploring resources and examples

# Additional Music-Related Hardware Practices That Challenge Technological Determinism



## Playlist With Lectures And Discussions On Rhizomatic Learning

[When Twice as Good Isn't Enough: The Case for Cultural Competence in Computing](#)  
Jul 27, 2020 · Unpacking Scholarship

[Discussing Computer Science in K-12 with Shuchi Grover](#)  
Jul 20, 2020 · Interview

[Toward a Theory of Culturally Relevant Pedagogy](#)  
Jul 13, 2020 · Unpacking Scholarship

[Integrating CS and Technology with Laurie "Mrs. Geeky" Green](#)  
Jul 6, 2020 · Interview

[Equity in Computer Science Education](#)  
Jun 29, 2020 · Unpacking Scholarship

[Lessons Learned Researching Computational Thinking with Stacie Mason and Peter Rich](#)  
Jun 22, 2020 · Interview

[I Can't Breathe](#)  
Jun 15, 2020 · Unpacking Scholarship

[Robotics and Physical Computing with Brenda Bass](#)  
Jun 8, 2020 · Interview

[Interested In Class, But Not In The Hallway: A Latent Class Analysis \(LCA\) of 2015-16 CS4All Student Surveys](#)



Let's  
continue to  
talk and  
reflect

- ▶ How might we modify or create technologies for (and with) the students we work with?
- ▶ How might we engage in pedagogical practices that encourages multiple ways of learning and engaging with technology within a shared space?
- ▶ How might we encourage companies to intentionally design hardware and software that can be modified by the people who use them?