ACESSE: Collaborative Network for Improvement in Science Education

Read the notes on each slide to learn more about project details.

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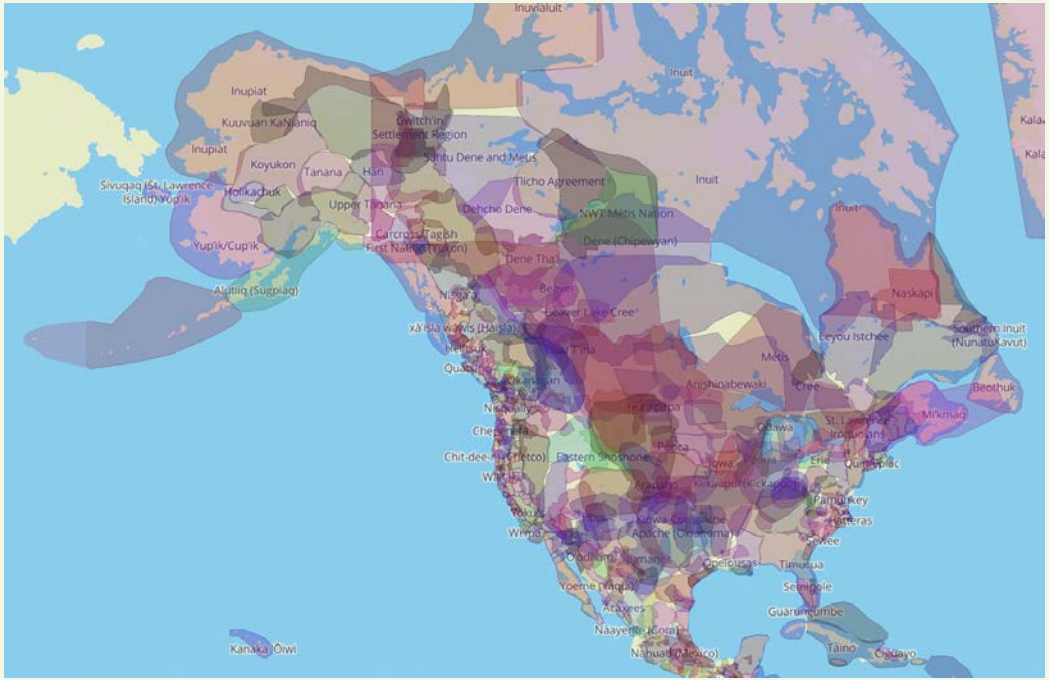
Tribal Land Acknowledgement

Native Land
https://native-land.ca



ACESSE stands for…

Advancing Coherence and Equity in Systems of Science Education

What makes for an equitable, coherent state system of science education?

https://sites.google.com/view/acesseproject/home

The ACESSE Collaborative

ACESSE Project Team

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https://sites.google.com/view/acesseproject/home

Research Questions

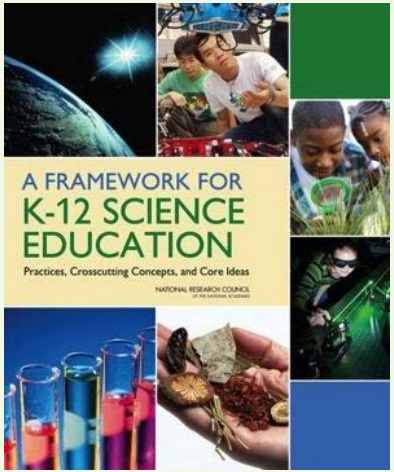
1. How is instructional guidance to teachers from states and districts changing over time?
2. How can we support the development of a shared understanding of equity and a commitment to a coherent set of equity projects across states?
3. How are leaders' strategic use of resources changing over time?

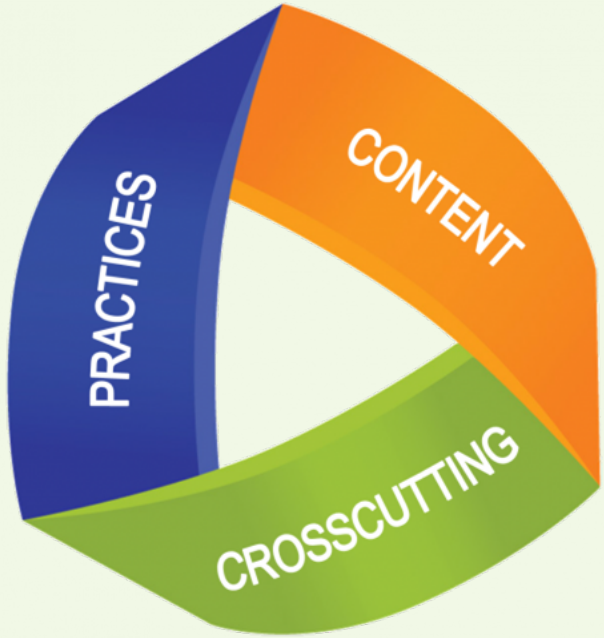
Organizing for Equity and Coherence

PROMOTE EQUITY	CRAFT COHERENCE	ORGANIZE TOGETHER
Expand learning access & disrupt inequities	Build a shared vision for science teaching	Build a distributed team to lead
Center justice in instructional practices	Bring key components into alignment	Network to share strategies & tools for change

Leadership capacity development for equity

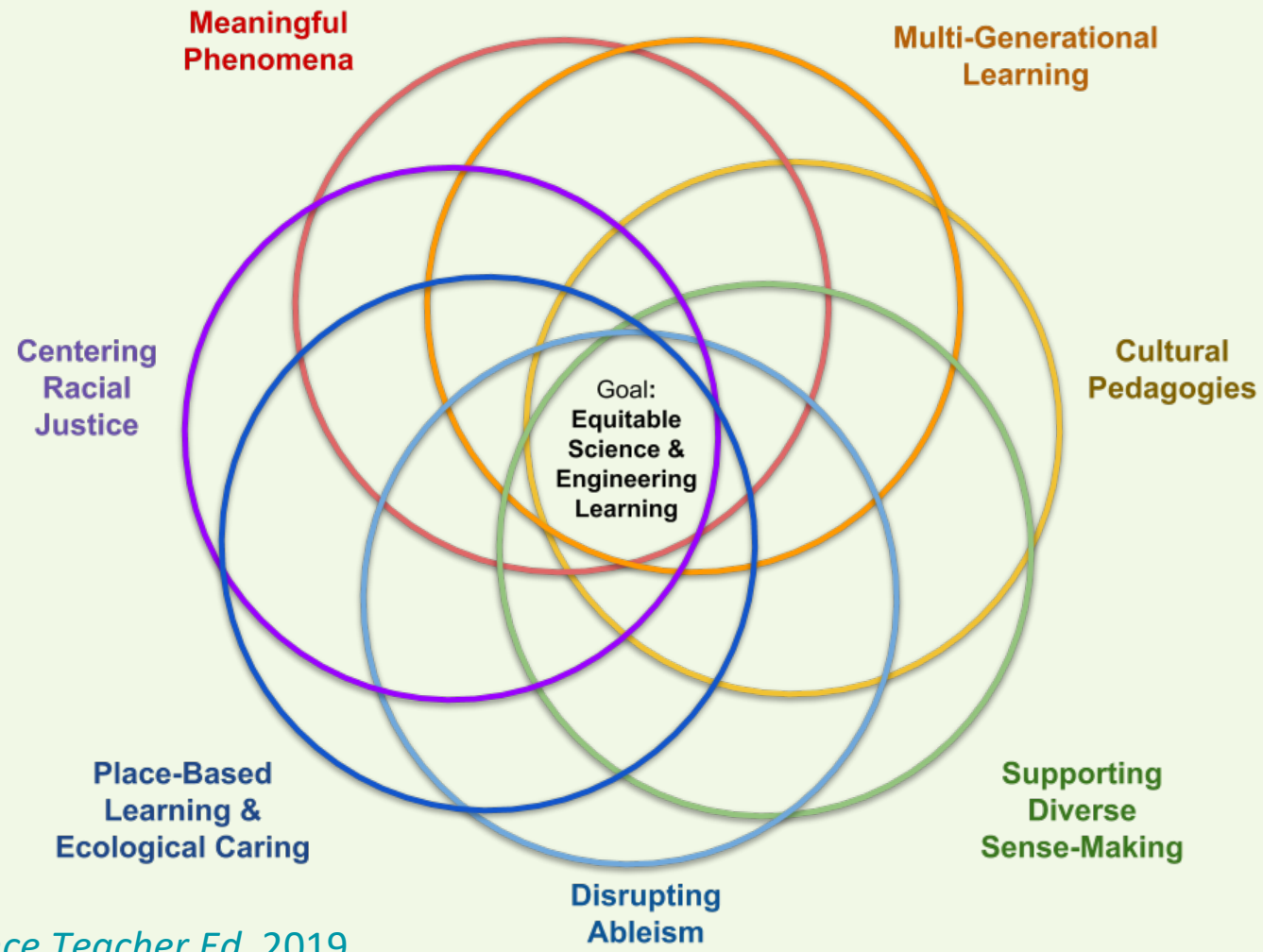
Supporting a 5 Dimensional Vision of Science Education





INTEREST

IDENTITY



Bell, *J of Science Teacher Ed*, 2019

Levers for Promoting Coherence and Equity

1) **Classroom Formative Assessment**
   Cognitive & cultural, relevant 3D tasks, facet analysis, self-documentation, diverse sense-making.

2) **Instructional Materials Adaptation**
   Support principled adaption to attend to local features.

3) **Leadership Capacity Development for Equity**
   Professional learning for strategic leadership.

The Work of ACESSE

Sensing & Guiding Improvement

Goal: **Equitable Science & Engineering Learning**

Leadership Capacity Development for Equity

Co-Design of Professional Learning Resources

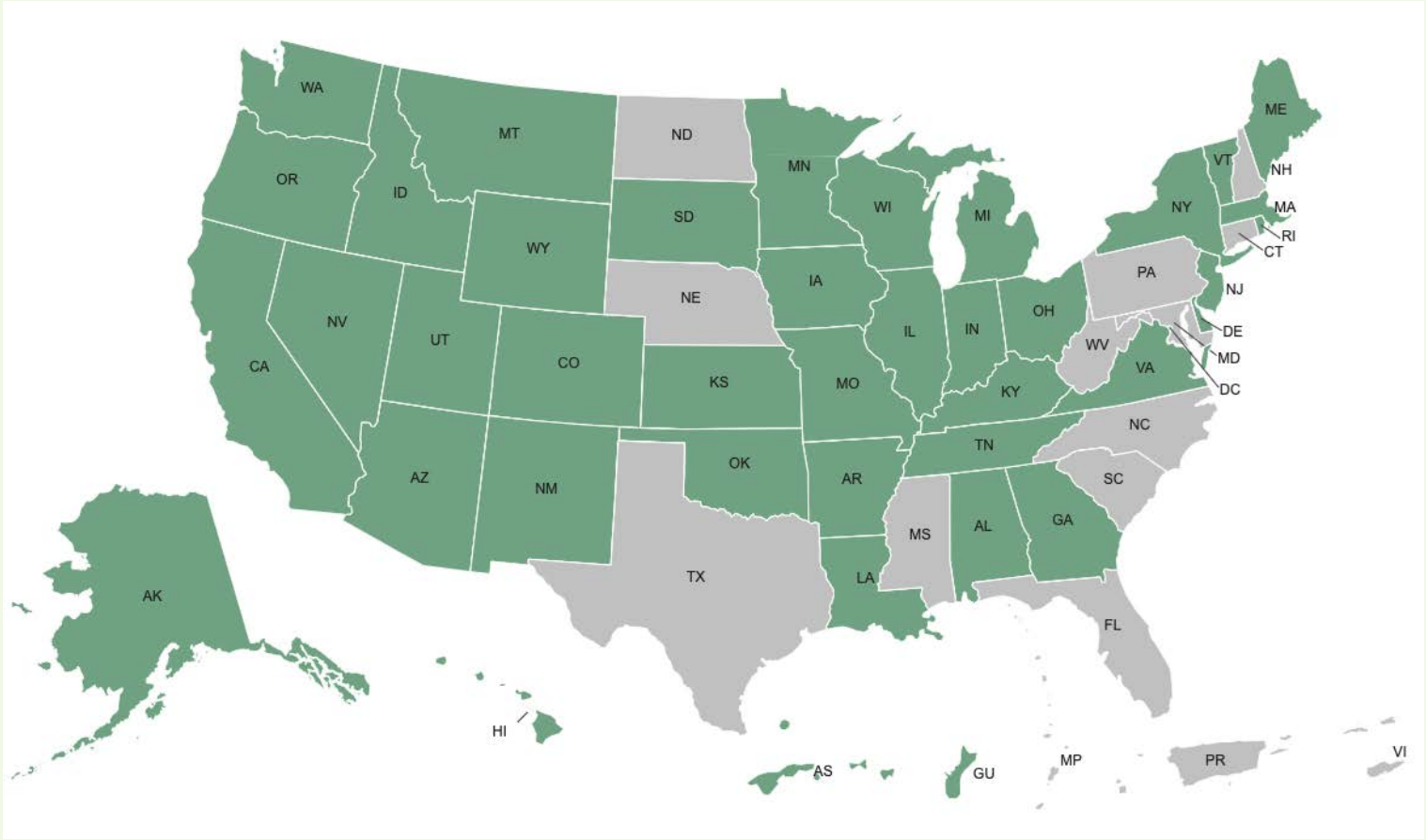
3 Lines of Work

Affinity Work Groups (within the network)

Local State Teams

Collaborative Groupings

ACESSE Network



Field-Level Connections & Collaborations

- NASEM Board on Science Education (BOSE)
- National Science Teaching Association (NSTA)
- State Collaborative on Assessment and Student Standards (SCASS- CCSSO)
- LPI Science Performance Assessment Learning Community (SPA-LC)
- National Science Education Leadership Association (NSELA)
- OpenSciEd Instructional Materials

Sensing & Guiding Improvement

Designed to help local teams understand local systems and set improvement goals

State Leader Survey

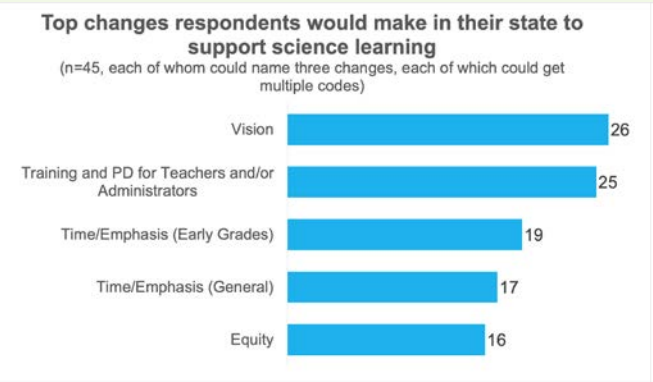
Priorities for change
Perceptions of policies and processes to support equitable science teaching
Awareness and involvement in equity projects

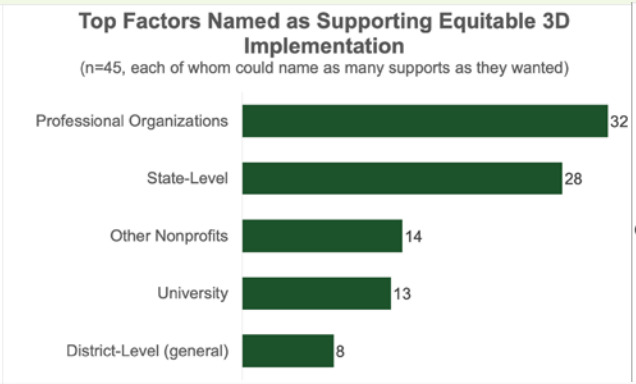
State Stakeholder Survey

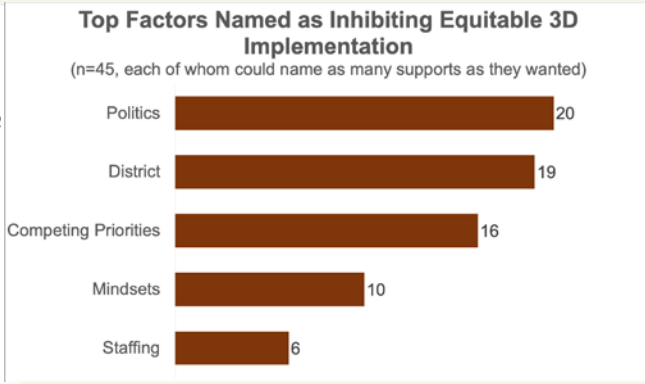
Priorities for change
Perceptions of policies and processes to support equitable science teaching
Awareness and involvement in equity projects
Noticing for Equity

Sensing & Guiding Improvement

Changes, supporting and hindering conditions for equity in states





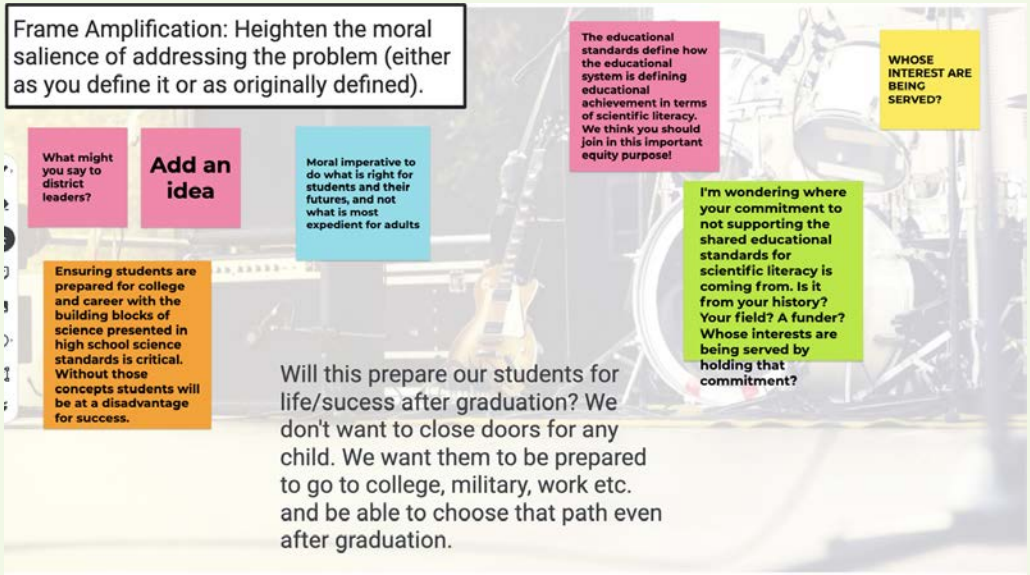


Leadership Capacity Development for Equity

Participate in a network focused on **improving state and local policies** aimed at **increasing coherence and equity** based on the vision of the Framework for K-12 Science Education

- **Collaborate with and learn from** other state science supervisors and researchers
- **Develop or enhance** state and territory **networks** leveraged **to further implement** the vision of the framework

Leadership Capacity Development for Equity



"Inquiry involves engaging in the practices"

"3D to 5D -- interest and identity matter!"

Portal frames can be invoked in any of these strategies

"What's good for science is good for literacy"

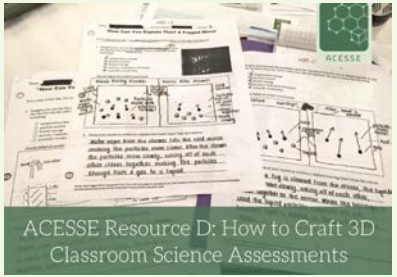
"Doing science includes cultural ways of knowing"

Co-Design of Professional Learning Resources

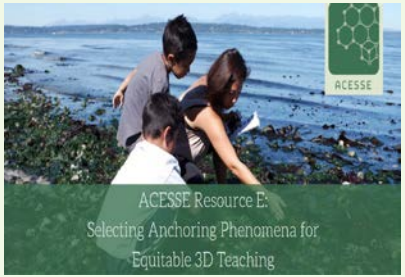
ACESSE Resource A: Introduction to Formative Assessment to Support Equitable 3D Instruction

ACESSE Resource B: How to Assess Three-Dimensional Learning in the Classroom

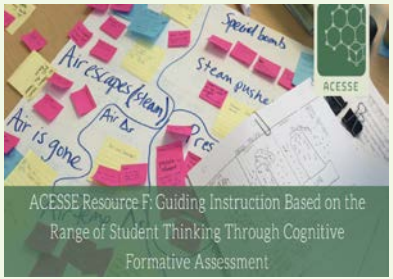
ACESSE Resource C: Making Science Instruction Compelling for All Students: Using Cultural Formative Assessment to Build on Learner Interest and Experience



ACESSE Resource D: How to Craft 3D Classroom Science Assessments

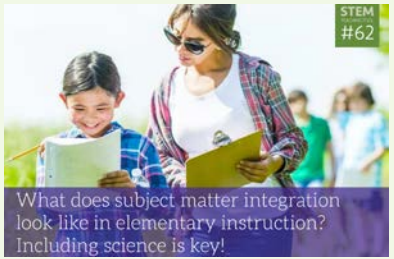


ACESSE Resource E: Selecting Anchoring Phenomena for Equitable 3D Teaching



ACESSE Resource F: Guiding Instruction Based on the Range of Student Thinking Through Cognitive Formative Assessment

ACESSE Resource G: Learning to See the Resources Students Bring to Sense-Making



What does subject matter integration look like in elementary instruction? Including science is key!

How can arguing from evidence support sensemaking in elementary science?

How place-based science education strategies can support equity for students, teachers, and communities

Why Do We Need to Teach Science in Elementary School?

Resources have been accessed, adapted & used very broadly.

ACESSE Collaborative Design Process

Identify

- Center on justice
- Interview / Survey
- Deliberate

Ideate

- Brainstorm
- Theorize
- Specify / mock up
- Design

Develop

- Create
- Use / test
- Review
- Iterate

Publish

- Polish & Post
- Support Adaptation & Use

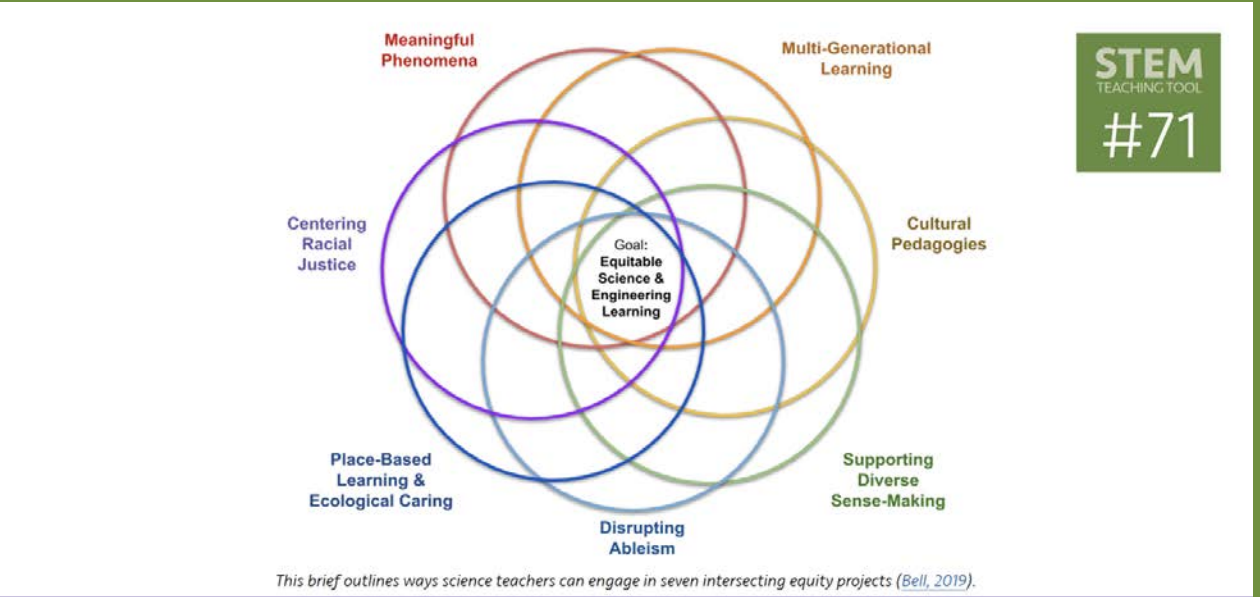
Revise

- Analyze
- Reflect
- Improve

← Engage in equity & justice learning and social dreaming throughout →

ACESSE resource development is guided by an intersecting equity project framework.

Collaborative design work helps refine such resources.



http://STEMteachingtools.org/brief/71

Professional Learning Resources to Support NGSS / Framework Implementation

- *Co-designed by practitioners & researchers*
- *Tested & refined over time*
- *Easily shareable—over social media, email, paper*

STEMteachingtools.org
@STEMteachtools (Twitter)
facebook.com/STEMTeachingTools