ACESSE: Collaborative Network for Improvement in Science Education

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Read the notes on each slide to learn more about project details.
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
State Contacts that Helped Build Sensing Tools: Brian Caine, Eric Hall, Mike Heinz, Lauren Kaupp, Kristen McKinney, Megan Schrauben, Douglas Watkins
Past Principal Investigators: Lizette Burks and Sam Shaw
Past ACESSE Project Team Members: Gina Tesoriero, Robbin Riedy, Shelley Stromholt, Kerri Wingert, Katie Van Horne

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**
- Expand learning access & disrupt inequities
- Center justice in instructional practices

**CRAFT COHERENCE**
- Build a shared vision for science teaching
- Bring key components into alignment

**ORGANIZE TOGETHER**
- Build a distributed team to lead
- Network to share strategies & tools for change

Leadership capacity development for equity
Supporting a 5 Dimensional Vision of Science Education

- Practices
- Content
- Crosscutting

+ Interest
+ Identity
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

3 Lines of Work

Leadership Capacity Development for Equity

Co-Design of Professional Learning Resources

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

<table>
<thead>
<tr>
<th>Top changes respondents would make in their state to support science learning (n=45, each of whom could name three changes, each of which could get multiple codes)</th>
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</thead>
<tbody>
<tr>
<td>Vision</td>
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<tr>
<td>Training and PD for Teachers and/or Administrators</td>
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<tr>
<td>Time/Emphasis (Early Grades)</td>
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<tr>
<td>Time/Emphasis (General)</td>
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<tr>
<td>Equity</td>
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</tbody>
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<tr>
<th>Top Factors Named as Supporting Equitable 3D Implementation (n=45, each of whom could name as many supports as they wanted)</th>
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<tbody>
<tr>
<td>Professional Organizations</td>
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<tr>
<td>State-Level</td>
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<tr>
<td>Other Nonprofits</td>
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<tr>
<td>University</td>
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<tr>
<td>District-Level (general)</td>
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<th>Top Factors Named as Inhibiting Equitable 3D Implementation (n=45, each of whom could name as many supports as they wanted)</th>
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<td>Politics</td>
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<tr>
<td>District</td>
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<tr>
<td>Competing Priorities</td>
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<td>Mindsets</td>
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<td>Staffing</td>
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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!”

“What’s good for science is good for literacy”

“Doing science includes cultural ways of knowing”

Frame Amplification: Heighten the moral salience of addressing the problem (either as you define it or as originally defined).

What might you say to district leaders?

Add an idea

Moral imperative to do what is right for students and their futures, and not what is most expedient for adults

The educational standards define how the educational system is defining educational achievement in terms of scientific literacy. We think you should join in this important equity purpose!

WHOSE INTEREST ARE BEING SERVED?

WHEN ARE WE SERVING KIDS?

PORTAL FRAMES: What’s good for science is good for literacy?

Will this prepare our students for life/success after graduation? We don’t want to close doors for any child. We want them to be prepared to go to college, military, work etc. and be able to choose that path even after graduation.

Portal frames can be invoked in any of these strategies

Ensuring students are prepared for college and career with the building blocks of science presented in high school science standards is critical. Without those concepts students will be at a disadvantage for success.
Co-Design of Professional Learning Resources

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.

How can you advance equity and justice through science teaching?

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