

Curriculum and Instruction

In-person Breakout

<https://tinyurl.com/nasemci>

the best
TIME
is
NOW



The Challenge

Thinking of adoption and implementation as an *event* rather than an *improvement process* will not help us achieve the vision of the *Framework*.

Even when High Quality Instructional Materials are available, we need tools to support all educators in teaching with them, support administrators in supporting their teachers in 3D teaching, and build parent buy in and community support.

This problem is urgent and acute in PreK–5, where realities work against effective implementation (or work against any implementation at all).

Supporting Access and Work with Tools for All Parts of the system



Building new tools
Leveraging Current Tools
Developing
Case Libraries



Success Stories from Each State



Collecting stories, tools, innovation, imagination and ideas from all states and territories.

Leveraging partnerships with organizations across the science education community that support HQIM (those developing, supporting spectrum from adoption through implementation, adapting, etc.)

Brainstorm Ideas

Opportunities/Challenges

- Preparing for high school curriculum implementation
- Access and experience in using HQIM: Localization, adaptability
- K-5 engagement in implementation of NGSS, materials
- The vision is far removed from where teachers are. Using curriculum materials that provide stepping stones. Maybe a research goal.
- Availability of time for K-5 science instruction.
- Examples of curriculum units that teachers can use in professional learning for providing ways to implement the vision of the Framework with an incremental path.
- Providing opportunities for teachers and students to love science.
- Mindset around curriculum: having the time, space, and funding for refining, localizing
- What is a learning progression for teachers to implement NGSS
- Small percentage of teachers that are redesigning, modifying because of time, PL, lack of support

Brainstorm Ideas

Opportunities/Challenges

- How do we honor the teacher as a professional? Provide support for new teachers through HQIM.
- Tensions:
 - enough support and freedom for the teachers to adapt
 - Structure of the standards vs. the freedom for teachers and students to explore
- What is flexible to adapt materials? What is fidelity in implementation to the goals of the reform vs to the specific details in the CM?
- Providing teachers research-based direction without telling them why those are helpful.
- Do we have research? - taking stock of where we are in implementation of Framework. where are teachers right now.
- Is integration a way to address time for science?

Brainstorm Ideas

Opportunities/Challenges

- The experience of a good unit: Curricula as a tool for changing classrooms.
- Support for educators to adapt without changing the structure and integrity of the unit design.
- How do you explain the use of research features in curriculum for the teachers (for PL, for novice teachers, for experienced teachers)
- State laws that push against equity-oriented design, social-emotional learning: Curriculum and book bans.
- Research around what the intentions of adopting HQIM.
- What is missing from HQIM? What tools need to be created?
- Criteria or tools for equitable practice, culturally-responsive and anti-racist materials, practices and **educational spaces**.
- Unification and adjustment of terms and definitions leveraging local control.
- There are existing tools in states that could be used: Washington State principal-teacher observation

Brainstorm Ideas

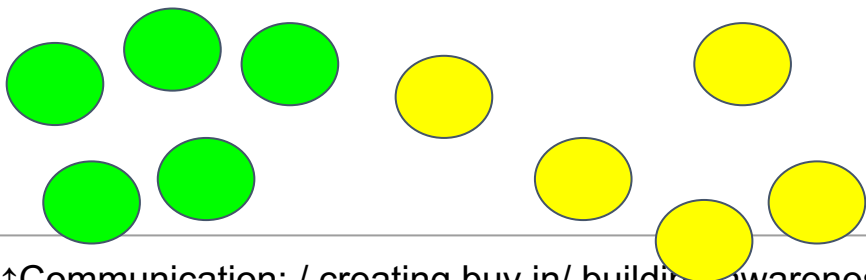
Opportunities/Challenges

- HQ preservice courses and other materials that are OER
- OER database of implementation stories that schools and district leaders can draw on
 - vignettes supporting quality adoption practices, what do classrooms look like, tools to guide professional learning planning,
- Figuring out what assessment looks like closer to the classroom-- below state assessment level: 3D feedback, student growth over time.
- Research in the implementation of HQIM and the needs of the different groups (those who adopted HQIM, the ones that adopted other curricula, and the ones that did not adopt any materials)

reframe the cycle of implementation as a **process**

- storytelling of 'why'
- Now what (we've adopted)
- audience - district leaders + teachers
- working on localization
- reframing PL as learning to teach with 3D (using the CM as the context) rather than learning to use the curric
- localize assessments
- supporting districts with OER tools documenting successes of other districts

supporting districts in selecting, implementing CM to support framework - ["making districts smarter"]

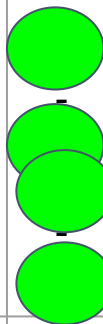


↑Communication: / creating buy in/ building awareness cultivating "smart demand" of HQIM

- Look fors
- layer of tools for parents, teachers, administrators, district leaders, policy makers
- parent advisory
- science/industry advisory
- awareness of curriculum cycle

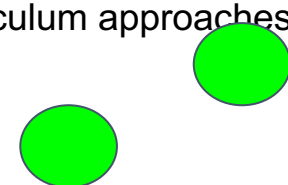
supporting teaching with HQIM

- already have been implementing
- Actors- the teachers or those working directly with teachers
- Develop models of balanced assessment systems (classroom, school, district, state)
- research on effective strategies for educative curriculum materials that meet the high bar of HQIM but are usable for teachers at diff stages of their learning trajectories
- [builds on implementation as process cell, we need time, reasonable goals for learning, etc]
- stepping stones CM that support TL but don't ask them to change everything at once
- set of tools for localization/place-based/cultural relevance



policy policy policy

- invite policy makers to classrooms
- invite classroom teachers to policy discussions
- parent advisory
- science/industry advisory
- Communicating how science integration connects with jobs
- Develop models of balanced assessment systems
- Challenge of push-back from some state legislatures on equity/justice-based curriculum approaches

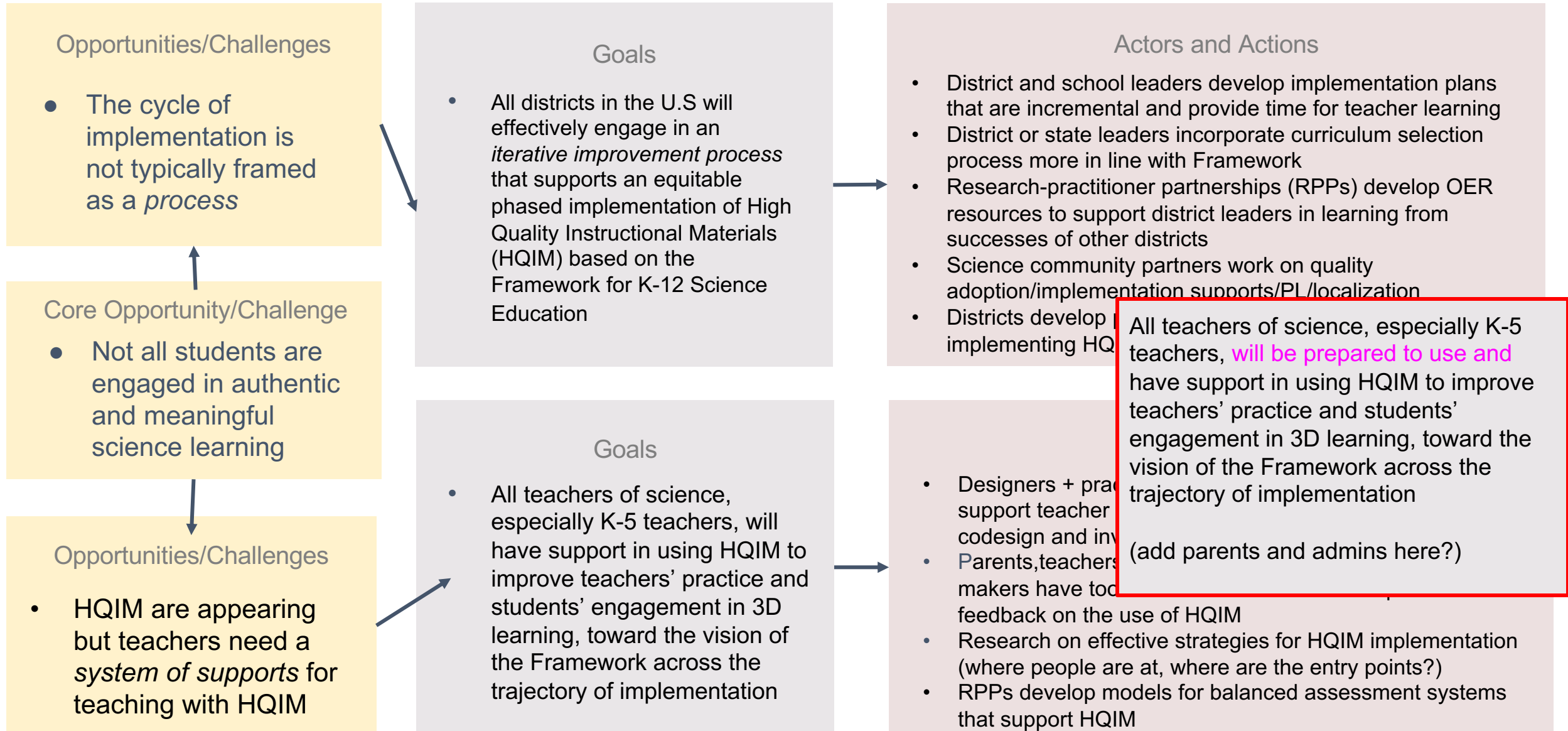


Stock taking research - figuring out where we are

Making connections among other aspects of education



Summary: Curriculum & Instruction In-person Breakout Room



Challenge	Resources	2 year goal	10 year goal
Even when HQIMs are available, if implementation is treated as an event instead of a process, the vision of the framework cannot be realized.	Research and frameworks on district capacity building for science reform (e.g. BaySci); IM selection and implementation (e.g. K–12 Alliance?); leadership support (e.g. ILSP). Guide to implementing the NGSS.	Landscape/needs analysis: how many districts are in what phase of IM implementation (and with what materials -- HQ, LQ, homegrown...) SL note: don't we ALREADY know a lot about how to do this? If so, what needs to happen/be done differently to impact this?	All districts in the U.S will effectively engage in a iterative improvement process that supports an equitable phased implementation of High Quality Instructional Materials (HQIM) based on the Framework for K-12 Science Education
Even when HQIMs are available, teachers need a system of supports for teaching with HQIM	Some HQIMs (Amplify Science, OpenSciEd, and individual NGSS Badge units) Research on effective integration of science with literacy and math. Research and frameworks for CRSE (though often not science specific); NYU Metro Center Culturally Responsive STEAM Scorecard Tools for different audiences: case studies, support for administrators in communicating with family about what science is and what it means for students, etc.	Audit of what is happening in elementary science (different group's charge?). (eg MD science Survey) Diagnostic tools with next steps for K–5 NGSS implementation (diagnose the state of your implementation -- then, how do you start/next steps) Research-based framework and guidance (or at least cases) for realistic, practical 'stepping stone' NGSS design and implementation particularly for K–5 teachers (and administrators) (e.g.: expectations for T preparation time, expectations/strategies for partial standards coverage, recommendation for models that fit within typical school structures, including integration with ELA/math/social studies, etc.) <u>A few exemplary</u> models of culturally responsive-sustaining science instruction at each grade band (stretch goal: also justice-focused) (meanwhile: support for policy levers that will create more time and resources for science in K-5, e.g. assessment and	All teachers of science, especially K-5 teachers, will have support in using HQIM to improve their practice incrementally toward the vision of the Framework across the trajectory of implementation Culturally responsive-sustaining science instruction is commonly defined with broadly agreed-upon criteria.