center for advancement of informal science education

CAISE: Connecting Practice and Research in the ISE Field

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About CAISE

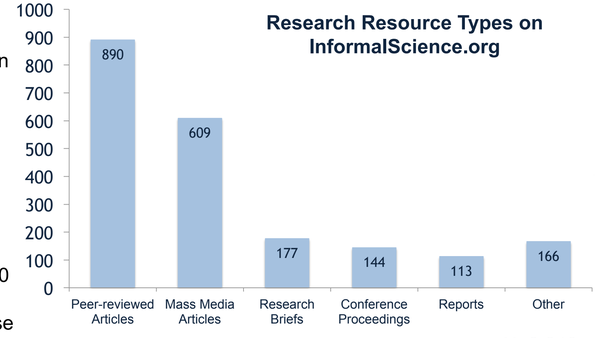
The Center for Advancement of Informal Science Education (CAISE) provides connectivity and resources for those researching, designing, implementing and evaluating informal science education (ISE) activities and projects. For the past several years, CAISE has been tracking the development of research agendas in the ISE field, and providing access to research through InformalScience.org to a variety of stakeholders.

InformalScience.org: An Online Repository for the ISE Field

In June 2013, CAISE launched the new InformalScience.org website, which serves as a searchable repository for informal science education (ISE) resources. InformalScience.org offers research and reference materials to users, including:

- Peer-reviewed articles (including full-text access through EBSCO's Education Research Complete database)
- Mass media articles
- Research briefs
- Conference proceedings
- Reports
- Other reference materials

There are currently about 2,220 research-related resources available via search and browse on InformalScience.org.



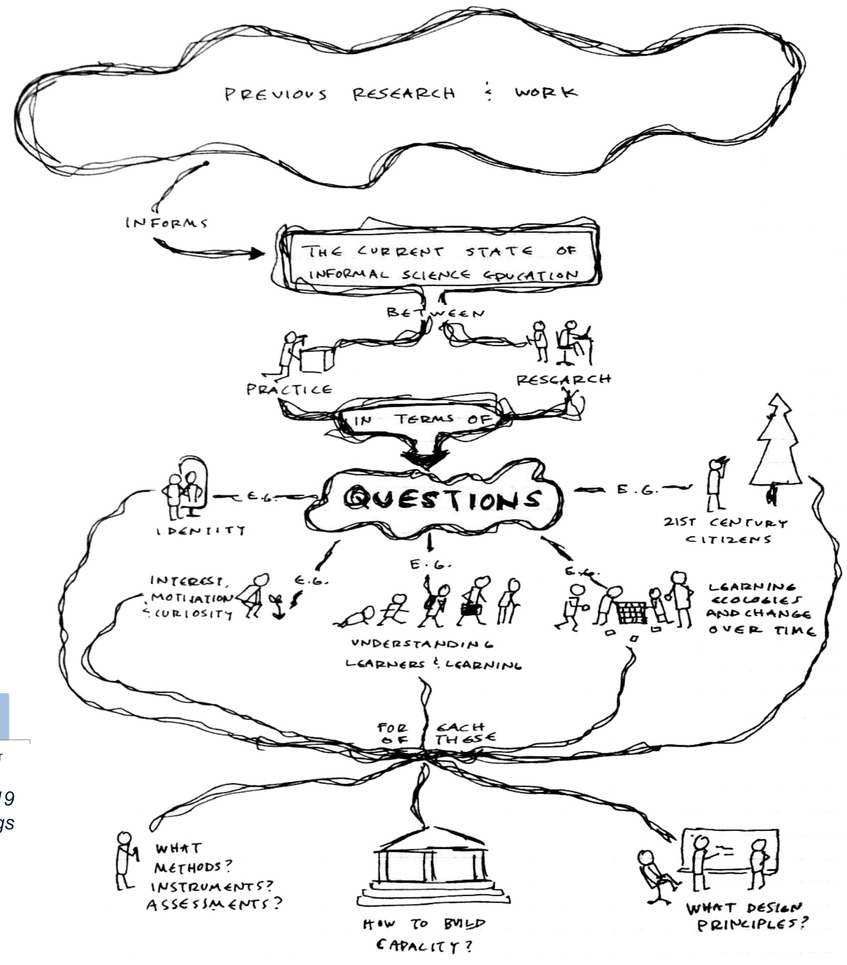
N=2,219
Resources can have multiple Resource Type tags

Practice and Research Convenings

In 2013, CAISE held two convenings to explore the current state of connection between practice and research in ISE. The **first convening** led to a needs assessment of researchers and practitioners, InformalScience.org collection development activities, and ongoing research agenda tracking efforts.

The second convening was a **workshop** that built on the first to develop a roadmap for practice and research in ISE that captured convergent questions and areas of interest to participating researchers and practitioners. The roadmap includes eight categories from which generative research questions might be further developed.

Workshop attendees do a card-sorting activity to find topics of common interest among their research questions.



Roadmap for practice and research in ISE schematic conceived by Practice and Research workshop participant Beck Tench

Roadmap for Practice and Research in ISE: Categories

- **Identity:** ISE is a fertile space in which to test innovative approaches for learners of all ages to develop identities in science.
- **21st Century Citizens**: ISE writ large is concerned with all learners, who are in or out of the STEM pipeline, and can be an effective way to engage learners in conversations around "big issues" like climate change and GMOs.
- **Learning Ecologies and Change Over Time**: The field has an incomplete understanding of what makes for an effective learning ecology and how to measure learning over time, both in and out of ISE settings. There is a rich opportunity to explore the impacts of ISE in larger learning contexts.
- **Understanding Learners and Learning**: ISE happens in a wide variety of contexts and configurations. Exploring how those contexts work with each other, and which are more effective for different types of audiences, can help the field grow to serve its audiences more effectively.
- **Interest, Motivation and Curiosity**: Many kinds of ISE experiences are designed to spark interest, motivation, and curiosity in STEM. There is more work to be done to see how interest, etc. can coalesce into deeper engagement.
- **Methods, Instruments, and Assessments**: There is a need to develop ways of measuring learning that are sensitive to ISE learners and learning environments. The ISE field is interdisciplinary and there is an opportunity to leverage expertise, and a challenge in determining how best to work together.
- **Design Principles to Support ISE Learning and Learners**: Inherent in this topic is bridging the kinds of questions that researchers and practitioners ask about ISE. Establishing a set of principles that underlie the design of effective learning environments is a step toward closing this gap.
- **Building Capacity**: For these topics to be explored in a cross-sector way, the ISE field must develop a culture of professional development, knowledge-sharing, and innovation.

Next Steps

Watch for an editorial that describes and builds on the roadmap for practice and research in ISE in an upcoming issue of the *Journal on Research in Science Teaching*.

An updated version of the roadmap schematic (left) will be shared on InformalScience.org.

CAISE recently launched a web page to help researchers and practitioners navigate the progress of different research agenda projects in the ISE field: *InformalScience.org/research/research-agendas.*

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