Conference: Interdisciplinary Perspectives on Imagination in Informal STEM Environments (DRL-1906899)

Through an NSF-funded literature review, professional survey, and virtual convening, the Museum of Science, Boston is systematically documenting intersections between imagination, STEM and learning to create research-based resources for positioning and attending to imaginative ways of thinking in informal STEM learning environments. This poster shares an overview of our research methods and preliminary findings (as of Sept 2021). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Foundation.

Comprehensive Literature Review

How is imagination defined across literature that addresses imagination and STEM?

What imaginative ways of thinking are represented across this literature?

In what ways is imagination positioned in relation to STEM?

What strategies for cultivating and fostering imagination in STEM are represented across the literature?

Professional Perspectives Survey

Gathering:
- definitions of imagination
- beliefs about imagination and its role in STEM practice and STEM education
- associations between imaginative ways of thinking and STEM practice/education
- levels of knowledge, curiosity, awareness, and interest related to addressing imagination in STEM
- current or intended pursuit of projects and practices that intentionally address imagination’s role in STEM

Virtual Convening

- 3 Open-to-All Panel Presentations
- 4 By-Invitation Workshop Intensives
- 170 professionals
- Pre-recorded Perspectives Videos
- Draft Resources and Tools

Defining, Describing and Positioning Imagination

cognitive, physical, social, and emotional processes involved in imagination

context towards which imagination is focused, or in which imagination emerges

trait or capability: a personality trait, capacity, ability of human development, or otherwise a characteristic of humans that varies over time, and from person to person.

process: a practice, way of engaging, or step within a larger progression that, if engaged in properly, can support or lead to some other ultimate end-goal.

outcome: a result, especially one that is caused by an action or event or a consequence of something.

Theoretical Framework: Process of Imaginative Play Engaged in the Classroom

Social & Physical Environments: Expressive Strategies & Contexts: Supporting Possibilities Thinking:

- Encourage social engagement
- Leverage narrative
- Challenge assumptions
- Attend to physical environments
- Invited embodied experience
- Invite creative inquiry
- Foster agency over resources
- Evoke emotion
- Scaffold awareness of alternatives
- Make room
- Integrate the arts
- Highlight relationships

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