

*Evaluator Perspective*  
**Returning to the informal:  
Changing questions and changing assumptions**

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The following framing and questions are offered to discomfort the ISE field, and especially those doing evaluation and research in this field. To create this discomfort, I want to trouble the whole notion of learning and, in doing so, challenge the assumptions of outcomes from engaging in informal science learning experiences, exhibits, and programs. The narrative below reflects my own internal work on troubling learning by intentionally pushing the idea of human learning as a wicked problem and pushing the boundaries of what I believe and see in my own practice. The framing is meant to spark critical dialogue and, if truly successful, create discomfort around what we have settled on as good practice. This is *not* meant as a criticism of the brilliant work that our field has and continues to do, but is meant to push us to rethinking informal science learning and taking the opportunity of the moment to perhaps make the turn (as the critical theorists discuss) toward change in the ways we do our work by changing the questions we ask and the assumptions underlying these questions.

Theories of learning in informal settings is built on decades (and in some cases over centuries) of critical work by brilliant theorists looking at children and usually examining these children in the context of the school. Schooling itself is a social creation and the *hows* and *whys* of schooling reflect societal needs, patterns, and trends of the contemporary. Consider how the current political climate of “literacies” is driving much of the study of learning in schools and what is considered learning, how successful performance is to be determined, and the constraints on the learning process. Only a portion of the theoretical base of informal learning is derived from the study of “human learning” which has been likened in many explorations to indigenous or natural learning. And some would argue it is only a very small portion of the operationalized theories we use that are based on human learning and not on schooling.

In innumerable dialogues, people express varying levels of agreement that informal learning is not schooling in a non-school setting, but the underlying assumptions such as those raised above are not challenged or altered. By not changing our assumptions and subsequently practice, our evaluation and research extends and applies the theories developed for helping us understand how (primarily) children are and learn in school

settings in socio-culturally determined points of time. Is this being honest about learning science in informal settings?

Is science learning in informal contexts the same as it is in school? Often, the nature of choice is (and justifiable should be) used as the starting point, but it remains a starting point, and not a turning point. Take, for example, the idea that someone may be highly interested in something yet not know much, *nor need to know much* about the hows or whys of the subject. I love to cook, but I do not need to know the chemical, physical, and biological reactions that allow me to create breads or toast, or ceviche. And to push the discomfort even further, why do we not challenge the differences in the bio-physical and psycho-social means by which people learn in settings other than schools? I am not suggesting that we have and continue to ignore the differences between schooling and learning, but I would offer that we do so apologetically and fail to push the boundaries of what, why, how, when, where, and Who (capitalization intended) is “becoming” through their temporal experiences with us.

I believe evaluation and research in informal science learning can be more critical of the theoretical bases on which our science “education” is conducted. To that end, the questions below are offered as a point of departure. The answer to each of the questions is, in some cases and to some degree, we already are. But if we examine the body of work in our field, it is clear that we are not building a theory of informal learning, but rather “dipping our collective toes” into the theoretical pool related to the following.

Should we be examining not *what* people learn, but *how* people learn in our settings? To do this, how do we begin to construct cognitive experiments (if we continue to believe science is a cognitive rather than conative field, that is)? Can we use neuroscience to better explore how the brain functions differently in different contexts? Using the base assumption that human learning is continual, horizontal, and natural, the questions are not “is learning different” but *how*.

Building on the above, is it possible that we change the dialogue from cognition being defined as outcome, and critically examine what happens to people as they experience our settings and programs (the ‘becoming’ rather than assuming a product as a finished person)? This, in part, begins to honor the situating of the individual in the co-created context of our program.

To push that even further, taking a page from the post-critical movement, how might we more intentionally situate participants/visitors/users in the context of the setting we are co-creating in order to more holistically understand how it is they are who and where they

are—and how they happened to have come to this particular activity at this particular time— in order to better understand the effect of our exhibits/programs/activities on the individual?

To radically shift thinking, let us not forget the importance of using econometric tools in our work. If we are serious about concepts of “value” of our institutions, programs, and work, how do we appropriately accommodate tools from economics into ISE evaluation and research?

And to extend the question on tools, current and emerging technologies offer tremendous opportunities for exploring the ways people learn. How do we engage with those using and developing tools available to build understanding of cognition, process, affect response, physiological response, and more? What are the questions we need to ask that give us theoretical insights and not just interesting anecdotes?

Even though this troubling of the idea of informal science learning leads me to far more questions, and the troubling of considering a theoretical base for learning versus schooling pushes me to challenge us even more, to draw this thought piece to a close one last structuralist idea needs to be pushed forward. We do our work in collaborative isolation. Should we have a research agenda for the field? And can we begin to see evaluation of ISE as evaluative research and begin to build our theoretical understanding through the cumulative insights that could be gained by asking questions against such an agenda?

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