

Building the Scientific Mind: A retrospective overview

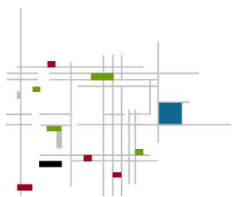
Thoughts at the start of the
Fourth Advanced International Colloquium on
Building the Scientific Mind

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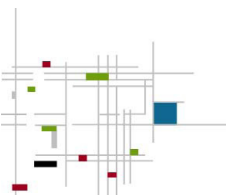
REVIEW

doi:10.1038/nature09678

Has the Earth's sixth mass extinction already arrived?

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Although there are many definitions of mass extinction and gradations of extinction intensity^{4,5}, here we take a conservative approach to assessing the seriousness of the ongoing extinction crisis, by setting a high bar for recognizing mass extinction, that is, the extreme diversity loss that characterized the very unusual Big Five (Table 1). We find that the Earth could reach that extreme within just a few centuries if current threats to many species are not alleviated.

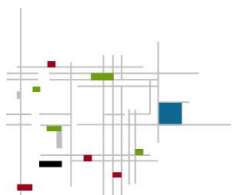


BtSM History

- ❑ **Overcoming the Underdevelopment of Learning** (AERA Symposium, Montreal, 1999 - <http://www.learndev.org/aera.html>)
- ❑ **Learning stories research** (from 2000 - <http://www.learndev.org/AECT2000Denver-LStories.html>)
- ❑ **Meaning of Learning dialogue** (MOL—meetings, workshops, publications: <http://www.learndev.org/MoL.html>)
- ❑ **Book of Problems dialogue** (BOP—meetings and publications: <http://www.learndev.org/BOP.html>)

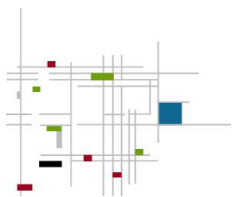
- ❑ **The Scientific Mind dialogue** (TSM—<http://www.learndev.org/SciMind.html>)
 - | **BtSM2005—The Hague** (<http://www.learndev.org/ColloquiumBuildingTSM2005.html>)
 - ❑ BtSM—New Delhi (national meeting - <http://www.insaindia.org/report-buildingscientificmind.pdf>)
 - | **BtSM2007—Vancouver** (<http://www.learndev.org/BtSM2007.html>)
 - | **BtSM2009—Cairo** (<http://www.learndev.org/BtSM2009.html>)
 - ❑ Supplemented by meetings at the national level before and after.
 - | **BtSM@AECT—Kentucky**
 - | **BtSM2011—Stellenbosch**

- ❑ **Sharing meals and walking together have often been crucial to furthering the dialogue. We are glad to continue the tradition.**



Issues to ponder

1. *Re-imagining learning (beyond mere schooling) and the environments that foster it.*
2. *Creating mindsets that are essential to the human ability to interact constructively with change.*
3. *Deep understanding of what we are, where we come from, and what may ensue, i.e. awareness and appreciation of our home in the universe.*
4. *Figuring out what is required to change the conditions of learning in response to the challenges of our time.*



Schooling not the same as learning

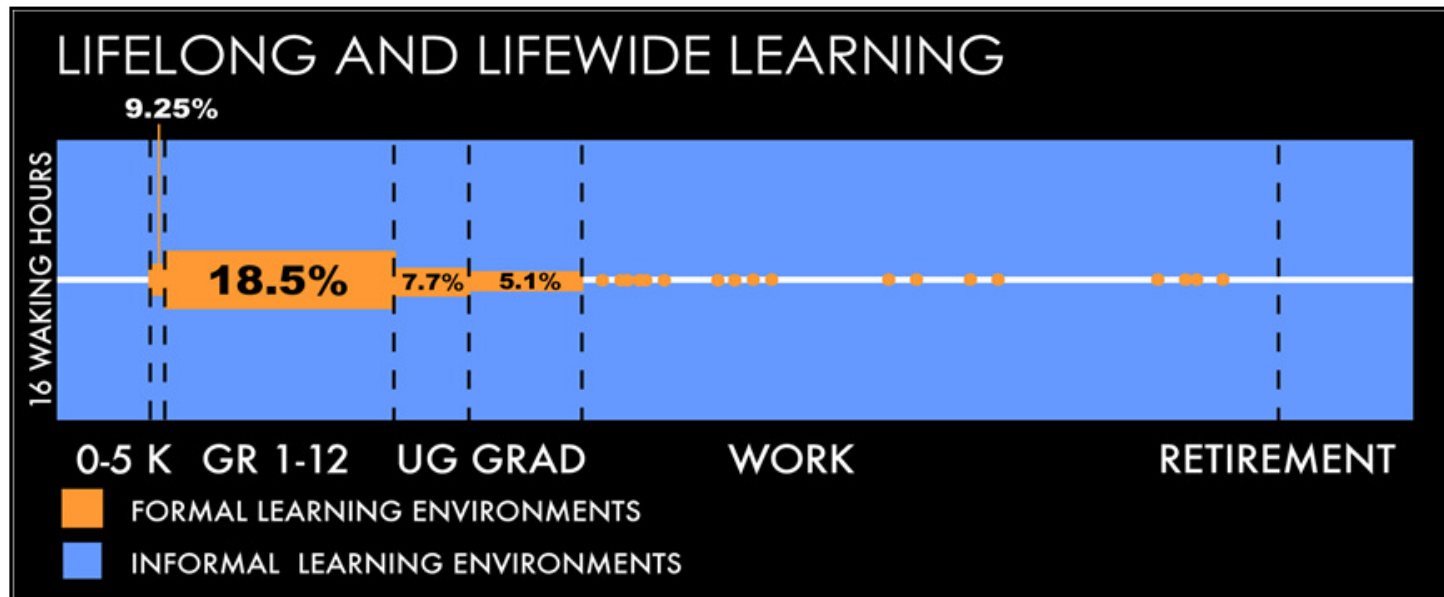
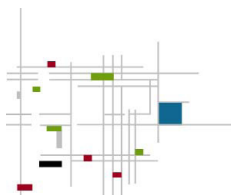


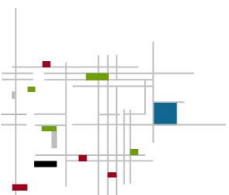
Figure 3-1. The LIFE Center’s Representation of Lifelong and Lifewide Learning

Source: Bransford, J. D., Slowinski, M., Vye, N., & Mosborg, S. (2008). The learning sciences, technology and designs for educational systems: Some thoughts about change. In J. Visser & M. Visser-Valfrey (Eds.), *Learners in a changing learning landscape: Reflections from a dialogue on new roles and expectations*. Dordrecht, The Netherlands: Springer.



The learning landscape is diverse and complex

- ❑ Schooling only a relevant part if adequately conceived and designed:
 - | Integral component of lifelong and life-wide learning journey.
 - | Fluid connections with other learning spaces: family, nature, community, media, productive and creative activity, etc.
 - | Driven by vision of today's problems and challenges and awareness of essential values.
 - | Geared towards building the mind rather than storage of factual knowledge.
 - | Ability to acquire knowledge and wisdom more important than possession of knowledge.
- ❑ Informal learning at least as crucial and pervasive, and certainly more diverse (probably even more important), but different in terms of deliberate intervention (different players).



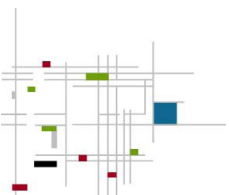
The scientific mind: A multidimensional mindset (and an attractor for discussions about the human mind in general)

The scientific mind is a complex mindset. The following suggestions are offered as a starting point for the description of its multidimensional character:

- The spirit of inquiry
- The spirit of collaboration
- The quest for beauty (harmony, parsimony, wholeness)
- The desire to understand and do so profoundly
- The creative spirit
- The urge to be critical
- The spirit to transcend
- The spirit of building on prior knowledge
- The search for unity
- The building of the story of human knowledge and ability
- The spirit of construction

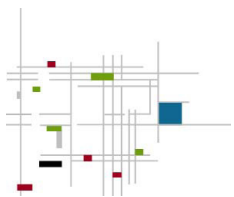
From: *The Scientific Mind in Context* concept paper.

<http://www.learndev.org/dl/TSM-ConceptPaper.pdf>



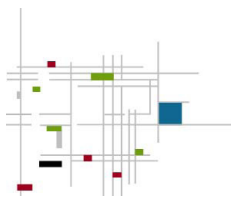
Sustainability

What does it actually mean?



The program

Let's have a look.



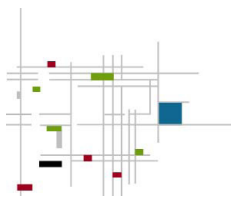
Discussion time

Questions?

Observations?

Suggestions?

Anything else?



THANK YOU

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