



*Conference on Building Usable Knowledge in
Mind, Brain, & Education
Harvard Graduate School of Education
October 6-8, 2004*

WEDNESDAY, OCTOBER 6

5:00 - 6:00 p.m.

Registration
Longfellow Hall

6:00 - 7:30 p.m.

Conference Prelude: Relating Neuroscience to Education
Longfellow Hall, Askwith Lecture Hall, First Floor
*Antonio Damasio, University of Iowa & Howard Gardner,
Harvard Graduate School of Education*

GUIDING QUESTIONS

How can neuroscience and education be related?
How can neuroscience research and theory inform education?
How can educational practice, research, and theory inform
neuroscientific research?

THURSDAY, OCTOBER 7

8:15 - 8:30 a.m.

Registration

Larsen Hall, Room G-08, Ground Floor

8:30 - 9:15 a.m.

Welcome, General Overview & Defining the Field

Kurt Fischer & Tami Katzir, Harvard Graduate School of Education; Steven Hyman, Provost, Harvard University; Ellen Condliffe Lagemann, Dean, Harvard Graduate School of Education

GUIDING TOPICS AND QUESTIONS

Conference overview

Relating biology, cognitive science, and education

What is the usable knowledge available?

How can it be used effectively?

What assumptions underlie current research?

How can education help define research agendas?

9:15 - 10:45 a.m.

Session 1: Successful Mind, Brain, & Education Models

Moderator: *Kathleen McCartney, Harvard Graduate School of Education*

Presenters: *Maryanne Wolf & David Rose*

Current Model I: How the Brain Learns to Read and What Happens when it can't: Insights from Cognitive Neuroscience for Intervention in Dyslexia

Maryanne Wolf, Tufts University

Current Model II: Universal Design for Learning: Meeting the Challenge of Diversity

David Rose, CAST

10:45 - 11:00 a.m.

BREAK

11:00 -12:30 p.m.

Session 2: Ability and Performance

Moderator: *Kenneth Kosik, Harvard Medical School*

Presenters: *Robert Plomin & Elizabeth Spelke*

Brain, Mind, and Education: Genetic Links

Robert Plomin and Yulia Kovas, University College, London

Mathematics

Cognitive neuroscientific analyses of development and learning of mathematics

Elizabeth Spelke, Harvard University Department of Psychology

12:30 -1:45 p.m.

LUNCH

Gutman Conference Center

1:45 - 3:15 p.m.

Session 3: Language, Culture, and the Brain

Moderator: *Tami Katzir, Harvard Graduate School of Education*

Presenters: *Laura-Ann Petitto & Usha Goswami*

New findings from educational neuroscience on bilingual brains, scientific brains, and the educated mind

Laura-Ann Petitto and Kevin Dunbar, Dartmouth University

Acquiring Language and Literacy: Cross-language Considerations and Phonological Awareness

Usha Goswami and Denes Szucs, University of Cambridge

3:15 - 3:30 p.m.

BREAK

3:30 - 5:00 p.m.

Session 4: Emotions, Learning, and Neuroscience

Moderator: *Paul Harris, Harvard Graduate School of Education*

Presenters: *John Gabrieli & Catherine Ayoub*

Emotions and Neuroscience

Emotions in learning and brain function

John Gabrieli, Stanford University

Emotional Regulation, Trauma, and Development

Diverse pathways of emotional development: Experience and biology

*Catherine Ayoub and Gabrielle Rappolt-Schlichtmann,
Harvard Graduate School of Education*

6:00 - 7:00 p.m.

Reception

Harvard Faculty Club, Reading Room

7:00 p.m.

Session 5: Dinner

Harvard Faculty Club, Library

Building Bridges in Mind, Brain and Education

John Bruer, McDonnell Foundation

GUIDING QUESTIONS

What are the frameworks within which basic sciences can
and cannot help education?

FRIDAY, OCTOBER 8

8:30 - 9:00 a.m.

Coffee and Conversation

9:00 - 9:15 a.m.

Overview of the Second Day

Tami Katzir, Harvard Graduate School of Education

GUIDING TOPICS

Modeling learning and development

The future of mind, brain & education:

- Graduate Programs
- Schools
- Ethical and interdisciplinary challenges

9:15 - 10:45 a.m.

**Session 6: New Methods: Modeling Growth in Learning
and Teaching**

Moderator: *John Willett, Harvard Graduate School of
Education*

Presenters: *Kurt Fischer & Paul van Geert*

Cognitive Development and Learning:

Analyzing the Building of Skills in Classrooms and Neural Systems

Kurt Fischer, Harvard Graduate School of Education; Marc Schwartz, McGill University; Michael Connell, Harvard Graduate School of Education

Dynamic Systems Theory: A Natural Tool for Understanding Development and Education

Paul van Geert, Groningen University, The Netherlands

10:45 - 11:00 a.m.

BREAK

11:00 a.m. - 12:15 p.m.

Session 7: Development of the Field: Graduate Programs and Research Centers

Moderator: *Antonio Battro, Argentine Academy of Sciences*
Presenters: *Kurt Fischer, Harvard Graduate School of Education; Usha Goswami, Cambridge University; Laura-Ann Pettito, Dartmouth University; Manfred Spitzer, University of Ulm; Hideaki Koizumi, Hitachi, Ltd.*

GUIDING QUESTIONS

What are the requirements and challenges for setting up an effective Mind, Brain, and Education program?
What are the cross-cultural issues for Mind, Brain, and Education?

12:15 - 1:15 p.m.

LUNCH

Gutman Conference Center

1:15 - 2:15 p.m.

Session 8: Mind, Brain, and Education in Schools

Moderator: *David Rose, CAST*
Presenters: *Jennifer Chidsey, Tom Liao, and Bruce Stewart, Ross School; Christopher Murphy and Robert Kahn, Landmark School*

GUIDING QUESTIONS

How can mind, brain, and education be integrated into practice and assessment in schools?

2:15 - 2:30 p.m.

BREAK

2:30 - 3:30 p.m.

Session 9: The Big Picture: Mind, Brain, and Education and Interdisciplinarity: Ethics, Problems, and Potentials

Objectives and vocabulary for relating biology, cognitive science, & education

Ethical concerns: “optimal brain organization”, cognitive enhancements, commercialization, accessibility of biology-based interventions

Moderator: *John Bruer, McDonnell Foundation*

Presenter: *Howard Gardner, Harvard Graduate School of Education*

3:30 - 5:00 p.m.

Session 10: Conference Wrap Up & Discussion

Discussion of the conference and future directions

Kurt Fischer & Tami Katzir, Harvard Graduate School of Education

Program subject to change