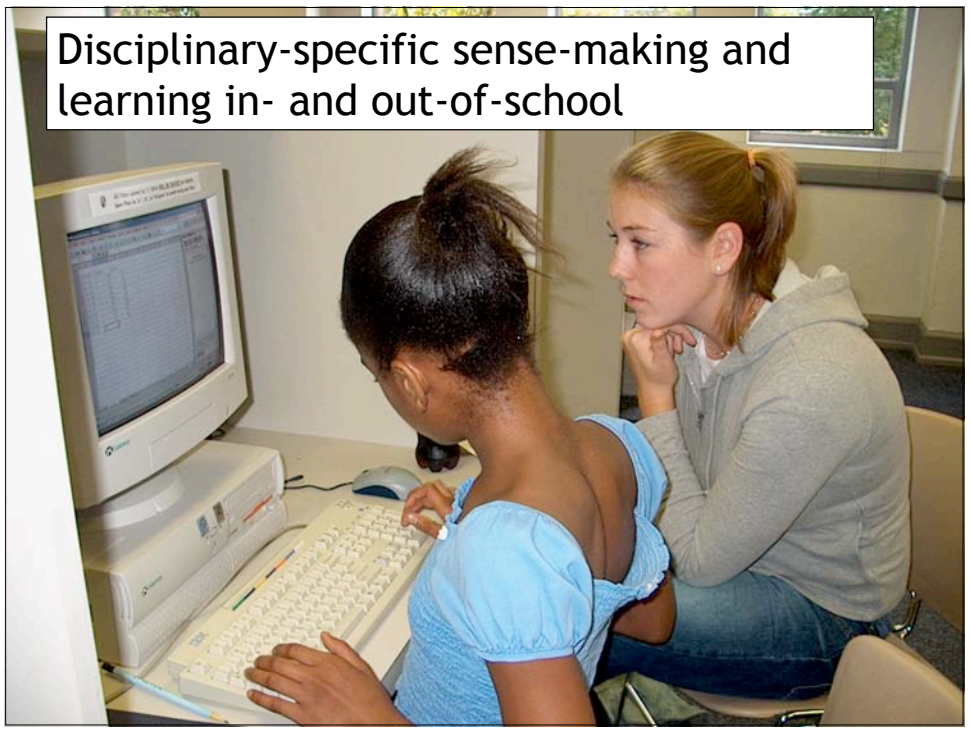
Reflections on the cognitive and social foundations of information and communication technology fluency

Philip Bell
Cognitive Studies in Education
University of Washington

Defining FITness for HS students

- A bit of a tension between…
  - A designer / builder view
  - A sophisticated user view (personal rationale)
- There is much to be gained by understanding sophisticated, everyday ("volunteer") uses of ICT


Disciplinary-specific sense-making and learning in- and out-of-school


Integrated, sustained use of ICT in daily activities

Part 1: Cognition & Learning Research

- Research coverage is uneven and should be pulled together
- Some resonance between FITness and general perspectives on problem solving
  - …however, many features of FITness would depend upon domain-specific cognition

Part 1: Cognition & Learning Research

- Relevant lines of work exist…
  - Metacognition, learning & trouble-shooting (cf. Frederiksen & White)
  - Organizing, navigating, and evaluating information
    - Disciplinary sense-making & learning
    - Cross-Subject Research Agenda (e.g., making sense of information across domains and contexts)

Part 2: The idea of FIT Social Practices

- NRC report depicts a largely mentalistic/individual account
- Follow the "practice turn" — understanding the details of what students do (esp. in patterned ways shared by a group)
- Might be considered a fourth dimension of a framework

Part 2: FIT Social Practice

- Cultivating and participating in a FIT learning community
  - Leveraging distributed expertise
  - Governed by shared norms (e.g., producing information)
  - e.g., programming communities

Part 2: FIT Social Practice

- Storytelling as a central practice to:
  - Describe ill-structured problems
  - Convey relevant info
  - Situate information
  - Make problems soluble
- Educational Implications