



Center for
**LifeLong
Learning
& Design**

University of Colorado at Boulder

Wisdom is not the product of schooling
but the lifelong attempt to acquire it.
- Albert Einstein

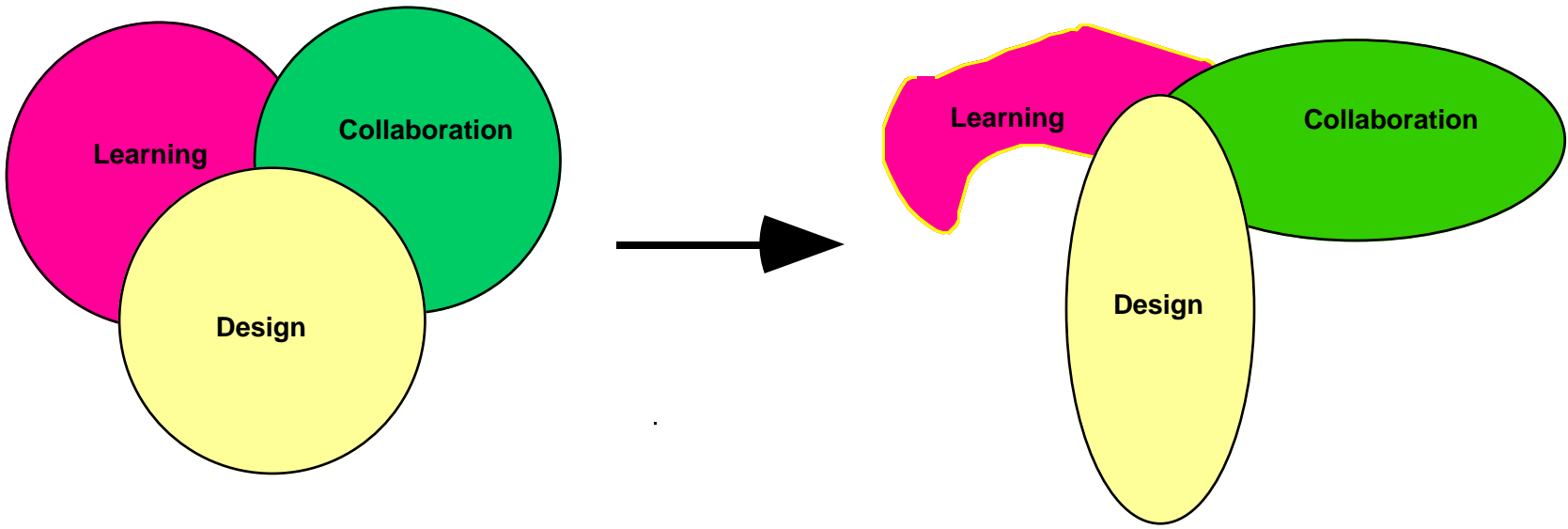
Design, Learning, and Collaboration

Things to Remember

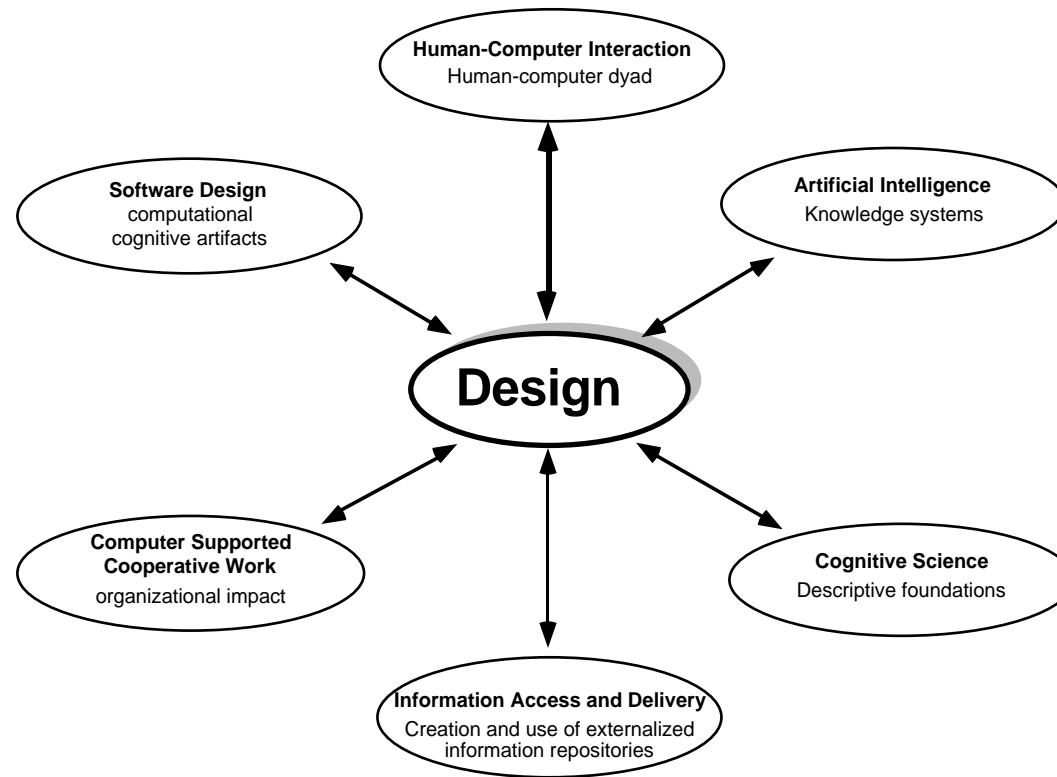
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Intersection of Design, Learning and Collaboration and their Changing Nature through New Media



Design Themes



Information — Do We want More or Less?

- **Herbert Simon:**

- *“If computers are to be helpful to us at all, it must not be in producing more information—we already have enough to occupy us from dawn to dusk—but to help us to attend to the information that is the most useful or interesting or, by whatever criteria you use, the most valuable information.”*
- *“Information consumes human attention, so a wealth of information creates a poverty of human attention. Design approaches suitable for a world in which the scarce factor is information may be exactly the wrong ones for a world in which the scarce factor is attention.”*

- **approaches to tackle the information overload problem**

- avoid “dumping” even more decontextualized information on people ----> make information relevant to the task at hand (e.g., push technologies should be based on some kind of “demand”
- say the ‘right’ thing at the ‘right’ time in the ‘right’ way

Learning Themes

- **“traditional” forms of learning**

- instructionism (teacher-centered)
- fixed curriculum
- memorization
- decontextualized learning
- knowledge transfer

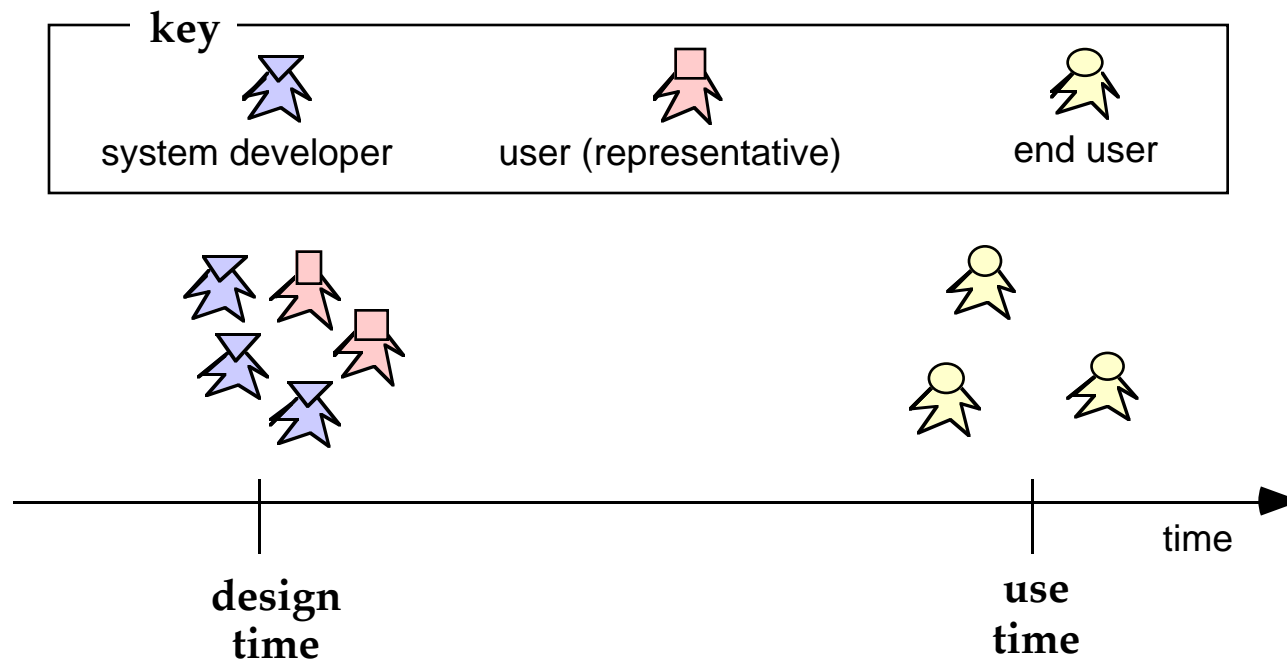
- **“new” forms of learning**

- lifelong learning
- self-directed learning
- integration of working and learning
- learning on demand
- organizational learning
- collaborative learning
- (intrinsic) motivation
- collaborative knowledge construction
- learning about computers -----> learning with computers

Collaboration Themes

- **transcending the individual human mind ----> distributed cognition**
 - exploiting the “symmetry of ignorance”
 - with humans
 - with artifacts / things
- **collaborative work practices**
 - develop around high-functionality applications
 - power-users and local developers develop
- **computer-supported cooperative work**
 - indirect, long-term collaboration
 - support community of practice with human problem domain interaction

Fundamental Difference between Printed and Computational Media



print media: a fixed context is decided at design time

computational media: decision at use time can take advantage of contextual factors only known at use time (e.g., dynamic forms, dynamic websites,

challenge: articulation of contextual factors at use time (about tasks, users, social systems,.....) — end-user programming, specification sheets, usage data,

Design, Learning and Collaboration

	design	learning	collaboration
theory	reflection-in-action, problem framing and problem solving, domains	knowledge construction, distributed cognition	symmetry of ignorance, shared understanding, knowledge management
systems	DODEs, design rationale, decentralized construction	Intelligent Tutoring Systems, Interactive Learning Environments	organizational memories, social filtering
practice	participatory design, long-term indirect collaboration, product and process	self-directed learning, beyond lectures	communities of practice, communities of interest
assessment	context, usable, useful	beyond tests, self-assessment	ethnography

Systems

- **Envisionment and Discovery Collaboratory**
- **Dynasite**
 - Dynagloss
 - Community Space
- **Sources**
- **Experts Exchange, Gamelan, Linux**

Themes

- **beyond “gift-wrapping” ----> on demand, interpretation, contextualization, simulation, critiquing, behavior**
 - *Jerome Bruner: “Old wine does not improve for being poured into different shaped bottles .”*
 - *Peter Drucker: “There is nothing so useless as doing efficiently that which should not be done at all.”*
- **beyond access ----> informed participation**
 - one of the major roles for new media and new technologies is not to deliver predigested information to individuals, but to provide the opportunity and resources for social debate and discussion