Creating Inclusive Learning through Collaborative Tools and Supports

Assistive Technologies for Learning: Broadening Participation in STEM
Relevant NSF Funded Research

InterLACE: Interactive Learning and Collaboration Environment, DRL (DR K-12), 2011 to 2016

Improving STEM Learning through Interactive RoboBooks, HRD (RDE), 2009 to 2011

Using Wide-Spread Collaboration to Motivate Innovation and Creativity, IIS (ITR-CreativeIT), 2008 to 2011

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Research: Educational Technologies

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Design and development of new hardware, software, interfaces, and environments for supporting innovative teaching and learning in K-12 and university classrooms.

Center for Engineering Education and Outreach
http://www.ceeo.tufts.edu
Interactive digital workbook environment
Interactive digital workbook environment, customizable by teacher for personalized instruction.
Universal Design for Learning (UDL)

Universal Design for Learning Guidelines

AFFECTIVE NETWORKS: THE WHY OF LEARNING

Engagement
For purposeful, motivated learners, stimulate interest and motivation for learning.

RECOGNITION NETWORKS: THE WHAT OF LEARNING

Representation
For resourceful, knowledgeable learners, present information and content in different ways.

STRATEGIC NETWORKS: THE HOW OF LEARNING

Action & Expression
For strategic, goal-directed learners, differentiate the ways that students can express what they know.
Vocabulary supports (text-to-speech, glossary, in-line definitions)

Self-checks and peer assessment/evaluation

Just-in-time adaptive help

Highlighting key concepts and ideas

Alternate means of expression (text, images, movies, etc)

Support of background knowledge (readings, examples, audio, video)

Journal & lab notebook (sentence starters, documentation tools)

Concept maps/graphic organizers (for activity progression and content)

Summaries/views of student work

“Chunking” work in smaller parts
InterLACE: Interactive Learning and Collaboration Environment
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• Interactive, Customizable Tools
• Supports with Universal Design for Learning (UDL) principles
• Broadening Participation through Inclusive Access
• Collaborative Learning via Shared Persistent Digital Spaces

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