

The Discovery Learning Space: Developing the Science Classroom of the Future

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The Discovery Learning Space:

- brings into the classroom activities that are based on real-world problems and that involves students in finding their own problems, testing ideas, receiving feedback, and working collaboratively with other students or practitioners beyond the school classroom, provide tools and scaffolds that enhance learning, support thinking and problem solving, model activities and guide practice, represent data in different ways, and are part of a coherent and systemic educational approach,
- gives students and teachers more opportunities, including those where students evaluate the quality of their own thinking and products, for feedback, reflection, and revision,
- gives students and teachers the opportunity to interact with working scientists, receive feedback from multiple sources including their peers and experienced cognitive tutors, and coach in areas where improvement is needed,
- builds local and global communities where teachers, administrators, parents, students, practicing scientists, and other interested community people are included in order to expand the learning environment beyond the school walls, and expand opportunities for teachers' professional development which includes helping teachers to think differently about learners and learning, reduces the barriers between students and teachers as learners, creates new partnerships among students and parents, and expands communities of learners that support ongoing communication and professional development of teachers

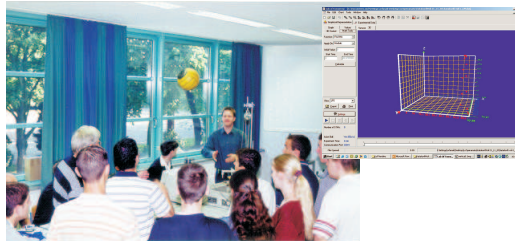


Figure 1: Kick life into the Classroom with the Lab of Tomorrow System: Playing with a "smart" ball with embedded sensors, gathering and manipulating experimental data of real life activities. One of the most successful examples of the role of "smart objects" in science education.

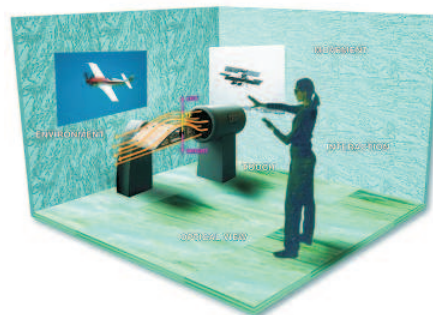


Figure 2: Visualizing the invisible using the CONNECT system: The visualization of natural phenomena could support the conceptual change. Immersive interfaces can foster educational experiences that drawn on a powerful pedagogy: contextualized learning. Situated learning requires authentic contexts, activities and assessment coupled with guidance from expert modeling, mentoring and "legitimate peripheral participation".