



# Taking Design Thinking to Schools

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## Project Overview



The Taking Design Thinking to School project is developing innovative partnerships that impact teaching and learning in K-12 educational settings. The Hasso Plattner Institute of Design and the School of Education are working with Stanford graduate students, middle school faculty and administration, middle school students, and university researchers on diverse projects to learn how to effectively implement design thinking as a tool for classroom learning. These include:

- Classroom Research Projects: East Palo Alto Academy/Bayside STEM Academy
- Professional Development Teacher Training Institutes/Winter/Spring/Summer
- d.school K-12 Lab Education Bootcamp Classes
- Curriculum Toolkit Development

## Design Thinking: Innovation & Creativity for the 21<sup>st</sup> Century

According to The Partnership for 21st Century Skills, the central economic competitiveness issue for the Obama administration is to create an aligned, 21st century public education system that prepares students, workers and citizens to triumph in the global skills race. A focus on innovation, creativity, critical thinking, problem solving, collaboration and communication is essential to prepare students for the future.



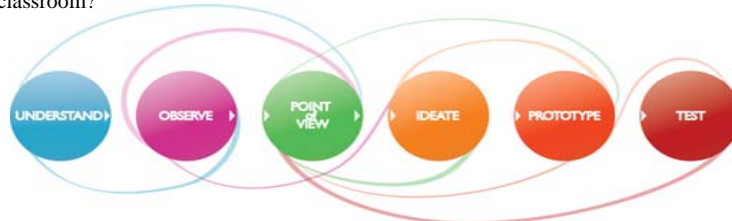
Design Thinking challenges students to find answers to complex and difficult problems that have multiple viable solutions, and fosters students' ability to act as change agents. It is imperative to bring design thinking and problem-solving skills to urban schools.

## Research Study

### Destination, Imagination & The Fires Within: Design Thinking in a Middle School Classroom

**Overview:** The purpose of the qualitative research study at the East Palo Alto Academy was to extend the knowledge base that contributes to new understandings of the role of design thinking in K-12 classrooms. The focus was on the implementation of a design curriculum by a team of university instructors and graduate students during a middle school geography class in a public charter school serving grades K-3 and 7-8. This pilot project lays the groundwork for scaling the work to schools nationwide that teach underserved students. Three key questions framed the study:

- How did students express their understanding of design thinking classroom activities?
- How did affective elements impact design thinking in the classroom environment?
- How is design thinking connected to academic standards and content learning in the classroom?



## Research Findings/Implications

Three major themes emerged from the research.

• **Design as Exploring/Understanding Design:** This theme highlights the ways in which students participated in the classroom design activities. Students explored design in a myriad of ways that were shaped by their social interactions, purposes, and understanding of the design process.

• **Design as Connecting/Affect & Design:** This theme highlights the role affective elements played in classroom design activities. The three most educationally significant aspects of this theme were risk-taking, expressing creative confidence in one's voice, and collaboration. These notions are critical parts of the social world of middle school students' lives. They are vulnerable and often have a strong desire to conform. The notion that one can take risks in a supportive environment is fundamental to design thinking.

• **Design as Intersecting/Design Thinking & Content Learning:** This theme highlights the relationship between design thinking and academic content learning. The evidence highlighted that this integration was not very successful. Students learned about design thinking principles, and some information about geography, but most made few connections between the two. The evidence suggested the critical role the teacher plays in the integration process.

## Moving Forward 2009

- Implementation of Design Thinking Research Study in Mathematics: East Palo Alto Academy/Bayside Middle School
- Development of Foundations in Design Thinking Research-Based Curriculum: Bayside Middle School/Henry Ford Learning Institute, Detroit, Michigan
- d.school K-12 Lab Design Thinking Class
- Summer Design Thinking Teacher Institute

