

Design Thinking

Developing solutions for your classroom, school, and district



Design thinking is a mindset that **focuses on solutions,** not problems.

Architects, designers, software developers ... **and teachers?** If you're wondering what teachers have in common with these other professionals, here's your answer: Teachers, including many in Sonoma County, have adopted a creative problem-solving approach that's commonly used by designers and they are applying it in their schools and classrooms.

Design thinking has come to the forefront as one way to bring new perspectives, energy, and approaches to the many issues facing education today. It is a process that integrates the needs of people with an effective strategy for generating, developing, and testing ideas. It can be used to address a variety of education challenges—integration of curriculum, learning spaces, teacher evaluation, master scheduling, professional development, parent communication, and more. Students can also use design thinking as they apply the 4Cs in project work and in-class challenges.

Early last year, SCOE's Educational Support Services staff researched the

potential benefits of design thinking, obtained intensive training, and made the process an integral part of how the department conducts its work. Staff credit design thinking with helping them bring new ideas to the table and connect the services they provide to the specific needs of Sonoma County schools and districts. Seeing the advantage of design thinking in their own work, the department began to spread the word and provide support to local educators interested in learning more.

The innovative eduIMPACT Summit that the department hosted in August came about through a design thinking process. The format

for this training was new—it offered many diverse professional learning options throughout a three-day timespan—and topics were determined by small-group interviews with district representatives. From those interviews, it was clear that a one-size-fits-all institute wouldn't meet the county's demands for teacher training related to Common Core. This knowledge led the SCOE staff to develop a new kind of training, one that could bring many professional learning strands together and provide access to experts in



During a "design thinking bootcamp" at SCOE, a school team creates a prototype showing how they will build community during the first week of school with a mural featuring teacher and student tiles.

person and through technology. Over 250 educators attended the eduIMPACT Summit and a similar event is planned for August 2015.



Design thinking

can lead to unanticipated, innovative, and impactful solutions.



A DESIGN THINKING BOOTCAMP

The 21st Century Teaching and Learning Summer Institute took the form of a “design thinking bootcamp,” giving teams of local

educators the opportunity to delve deep into this new problem-solving approach. Sixty-eight teachers and administrators were immersed in a four-day challenge focused on this question: *How can we improve the first week of school?* They worked in mixed teams to address this issue, thus moving out of their traditional school- or district-based groupings to support the cross-pollination of ideas.

The teams began the design thinking challenge by heading out into the community to interview people, young and old, about their experiences as students and their thoughts about the annual start of school. These interviews were part of what’s called the **empathy phase** of the design thinking process. Here, the goal is to ascertain the human needs contained within a design challenge. For the Summer Institute teams, the interviews helped them visualize the first week of school not only through their lens as educators, but also with an understanding of student and parent concerns. It prepared the teams to develop human-centered solutions that took into account the needs of every person who is part of the first week of school.

Following their community interviews, the teams shared and analyzed their findings, then used what they had learned to clarify the problems they were working to address. They were now ready to brainstorm possible solutions, which in the jargon of design thinking is known as the **ideation phase**. As they brainstormed, participants were encouraged to think big—and small—and to not let potential barriers limit their thinking. Post-it notes captured ideas and were arranged chaotically at first, then gradually became organized as solutions took shape.

According to practitioners, the ideation phase is one of the real benefits of design thinking. It removes constraints and creates a willingness to ask, “What if...?” This can lead to unanticipated, innovative, and impactful solutions.

As the next step in the process, the teams were asked to **prototype** one or more of their proposed solutions. A prototype is an early sample or model that’s built to test a concept, assess whether it can be replicated and/or brought to scale, and determine if modification is needed. Prototyping is common in

many fields where ideas need to be “made real” in order to determine how users will interface with a proposed solution, but it has a place in education as well. It opens the door to small-scale experimentation before making wholesale

Characteristics of design thinking

■ It’s optimistic

Design thinking is based on the belief that there are solutions to the challenges we face, whether it is how to help a struggling student, implement a new program, or reorganize district staff for greater efficiency.



■ It’s collaborative

Design thinking brings people together to share possibilities, build on one another’s ideas, and apply group thinking to hone in on and perfect the best solutions.

■ It’s human centered

Design thinking requires solution-seekers to first understand the relationship of human needs to the challenge at hand, then use that understanding to find solutions that address those needs.

■ It’s experimental

Once solutions are identified, they are tested and refined. Identified solutions aren’t finished products, but rather prototypes that may need retooling to be effective.

“ Design thinking is an approach to addressing challenges in a thoughtful and fun way, where you get to apply the 4Cs—collaboration, creativity, critical thinking, and communication—to your own work as you develop new solutions for your classroom, school, and community.

—from **Edutopia**

Watch a video



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▲ Annette Diefenthaler, senior design research specialist at IDEO, discusses the use of design thinking in education and the *Design Thinking Toolkit for Educators*, which she helped create.

www.designthinkingforeducators.com

changes, which is key to ensuring that changes made in the classroom or on campus will be accepted and lead to success.

The final phase of the design thinking challenge brought the Summer Institute teams together to present their prototypes and get feedback from others. This brings up another important point about design thinking: It is an **iterative process**. Each time an idea is prototyped or implemented, it is evaluated and retooled as needed.

TAKING THE PROCESS TO SCHOOL

At the conclusion of the Summer Institute, participants reassembled in their respective school/district teams to consider how design thinking could be applied to the issues they faced on their campuses.

The team from **Marguerite Hahn Elementary School** focused on this question: *How can we create effective collaborative time that meets the needs of staff and leads to increased student achievement?* Using the design thinking process, they gathered input from staff, brainstormed ideas, developed a plan, and will test their proposed solutions throughout the fall.

Their prototype involves several components. First, they shortened their monthly staff meeting to 30 minutes. To address topics that no longer fit in the meeting time slot, all staff agreed to be diligent in reading emails, responding to memos, and participating in group decision-making via whiteboards and surveys. These agreements will allow them to take care of routine business outside of the meeting and allocate new time to grade-level collaboration.

The school also moved all grade-level meetings to the multi-purpose room. This strategy yielded immediate results as grade-level teams spontaneously and effortlessly shared insights with each other—which is something that wasn't happening before. A weekly “mini time slot” was also scheduled for teachers to come together informally and learn from each other. Teachers volunteer to highlight technology tips, new instructional strategies, resource ideas, and more.

Montgomery High School teacher Chris Schloemp used design thinking to resolve a classroom challenge he was facing. He explained the design process to his students and English department colleagues, then posed this question: *How can we create a discussion participation system that meets the needs of teachers and all different types of students?*

“We engaged in a shortened version of the design process and eventually came up with something both simple and extraordinary,” Schloemp reports. Their solution goes like this: Every student has a cube on his or her desk. Each side of the cube has a different color and each color communicates something to the discussion circle:

- **Red** = I don't know or I'm not ready to answer that question.

“Design thinking is a process of creative and critical thinking that allows information and ideas to be organized, decisions to be made, situations to be improved, and knowledge to be gained.”
—Dr. Charles Burnette, design educator

- *Orange* = I think we are ready for a new topic.
- *Yellow* = Slow down, repeat that, or I have a question.
- *Green* = I am good to go. Call on me!
- *Blue* = I have a counter-argument to that. Call on me soon before the topic changes.
- *Purple* = I believe I have talked enough today, so I’m going to back off and let others have some room.

During the design thinking process, the students also proposed eliminating the “favoritism issue” by allowing the student who has the floor to call on the next speaker. As the teacher, Schloemp says he steps in when everyone is showing red or when a critical bit of guidance is necessary. Otherwise, he says, “the students run the show.”

Schloemp has been using this system for nearly two months now and says, “It is amazing. I have never seen such broadly dispersed participation across an entire class before. The students feel proud of their system and they take care to nurture it, just as owner-creators would. We went through two previous prototypes (the colors used to mean something slightly different), but now we’re settling in. I can collect constant feedback from the entire class at all times and see exactly where I need to re-teach or explain concepts better.”

At **Piner High School**, teacher Judy Barcelon has also brought design thinking into the classroom and is using it over a three-week timeframe to engage biology students in uncovering the health-related issues that affect Piner High students. The goal, says Barcelon, is to collect student-based solutions for addressing health and medical issues that interfere with student success and well-being.

The students first developed an interview process, then spread out across campus to talk with their peers. They analyzed the data that this yielded with a goal of pinpointing issues on campus that are specifically health-related. From there, the students worked in groups to put forward solutions with “no limits allowed.” With an open door to all creative solutions, the groups have created prototypes and will present their best ideas to a team of community health practitioners in late October. Their last step is to “rethink and redo” based on that input, then plan for possible implementation.

LEARN MORE

If you’re interested in knowing more about design thinking, SCOE has two professional learning opportunities scheduled. On January 14, [Design Thinking for Educators](#) will engage K-12 teachers in applying design thinking to school-based challenges, and a [two-hour administrator workshop](#) will be presented on January 27. Staff are also available to assist schools working to use this creative problem-solving process. To access support, contact Dan Blake, SCOE’s director of innovation and partnerships, at dblake@scoe.org or (707) 524-2780. ■

Phases in the design thinking process



- **Empathy**
- **Interpretation**
- **Ideation**
- **Experimentation**
- **Evaluation and Evolution**

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