THE BEGINNER'S GUIDE TO
DESIGN THINKING
IN THE CLASSROOM

IGNITE
STEM

Written by AJ Juliani, adapted from www.ajjuliani.com

The Beginner's Guide to Design Thinking in the Classroom

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In the first post of this series, I shared my biggest fear as an educator (being ineffective and my students not caring about learning). We looked at the role choice, inquiry, and ownership play — in not only engaging our students — but also empowering them to intrinsically care about what they can learn and do in school.

But giving my students choice and allowing them to being curious learners was hard work. In fact, sometimes I was still really ineffective at guiding the learning that was taking place in my classroom. I tried many different project-based learning frameworks, embraced the inquiry cycle, and tweaked my own idea of how to structure this type of innovative and creative work.

My research (and trial and error as a teacher) led me to design thinking (most noticeably the work of Stanford d.school and IDEO). It was through design thinking that I found a process and methodology that worked for all kinds of complex problem solving and creative work.

In this article, I'll take you on a tour of design thinking. It's the process that I've used countless times as a teacher, curriculum leader, technology coach, author, and entrepreneur. Here's what we'll cover:

1. **What is Design Thinking (and the LAUNCH Cycle)?**
2. **How is design thinking used around the world?**
3. **How can I use design thinking in (and out of) my classroom?**

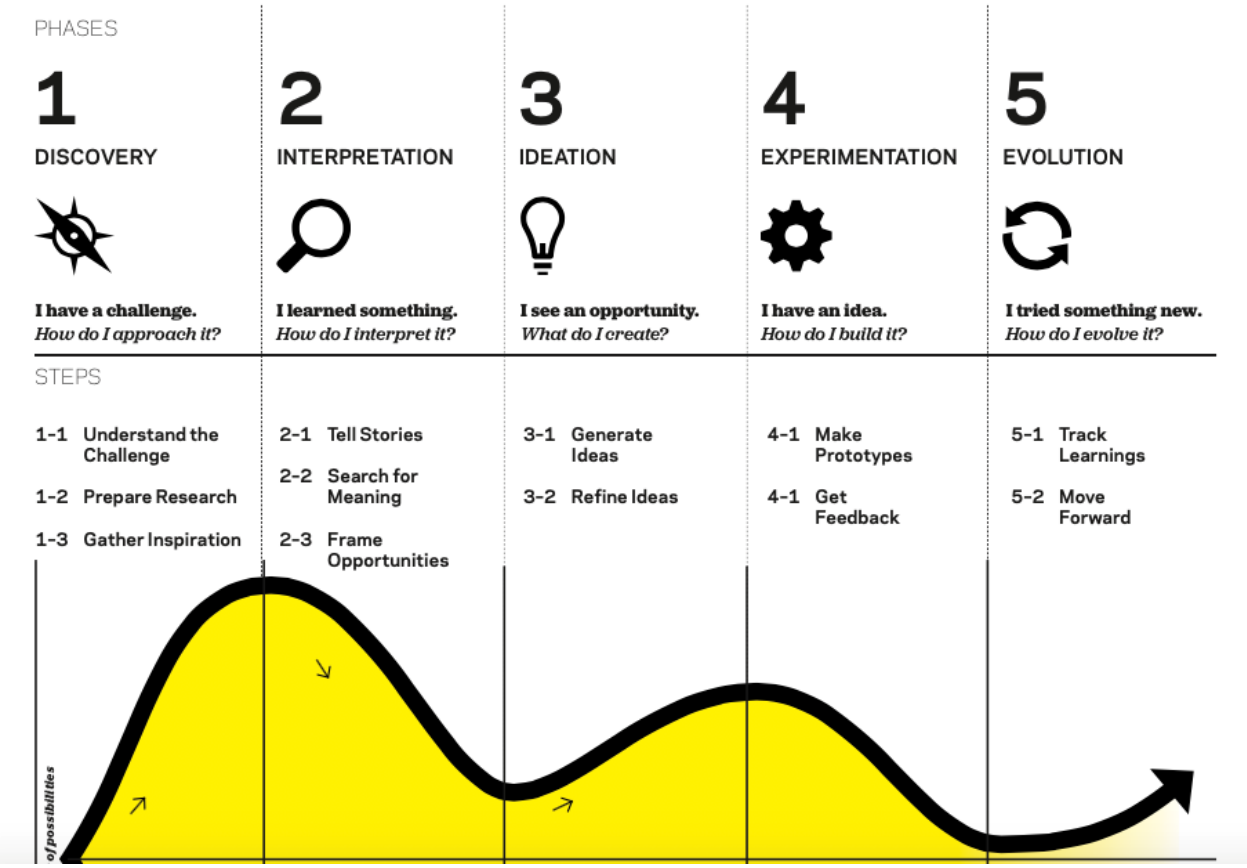
1. DESIGN THINKING IS THE PROCESS

Design thinking provides a way to think about creative work. It starts with empathy, working to really understand the problems people are facing before attempting to come up with ideas and create solutions.

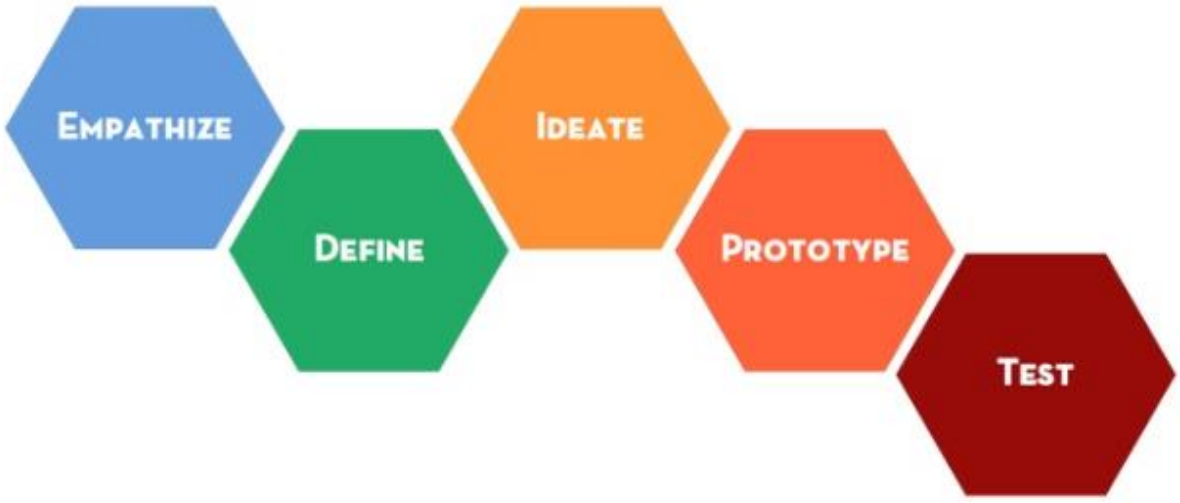
It's a bit of a debate where design thinking originated. Some claim that it started in the sixties with *The Sciences of the Artificial.* Others point to *Design Thinking,* which focused more on urban planning and architecture. Still others point to Robert McKim's work in *Experiences in Visual Thinking.* Like all great ideas, it has been an evolution, influenced by thousands of people. We know that our work around Design Thinking has been influenced by people like Tom and David Kelley, Tim Brown, John Maeda, Peter Rowe (as well as organizations like Stanford d.school and IDEO).

There are a number of different interpretations of the phases in Design Thinking.

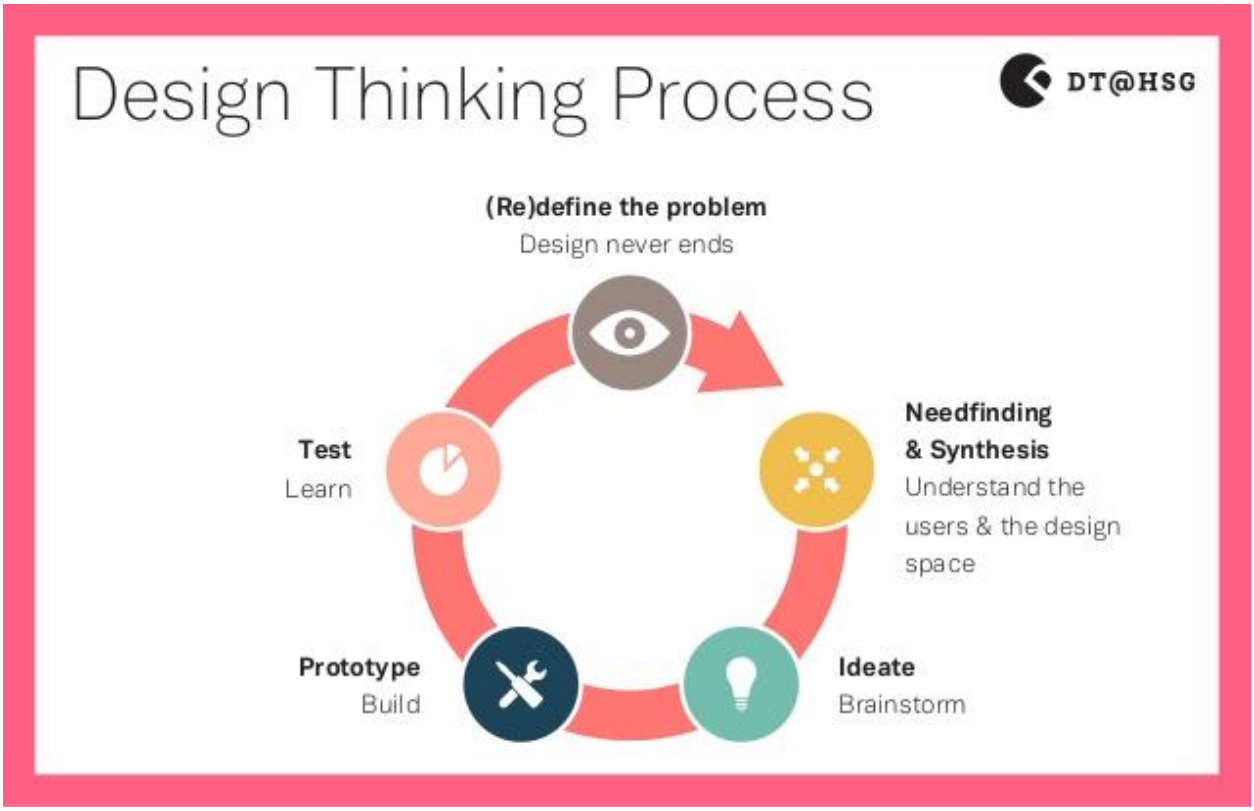
Here are the phases of Design Thinking as described in IDEO's "Design Thinking for Educators" toolkit (an awesome resource):



Here are the phases of Design Thinking as shared by Stanford d.school (and they again have fantastic resources):



And there are other models, frameworks, and descriptions of the design thinking phases from various organizations and universities:



I began to use the design thinking process during 20% time and Genius Hour projects. I helped other teachers structure their inquiry projects filled with choice around the design thinking process. I saw the process as a new way to develop lessons, units, projects and curriculum.

When I got into a conversation about design thinking with John Spencer (who was also using the process as a classroom teacher), we both agreed that the biggest struggle we had when using design thinking and sharing the process with other educators was it's implications for K-12 students.

What did we do about this problem? We began to try and solve it using the design thinking process.

We looked at the terminology used, the sample exercises and activities available, and how teachers and students responded to the different phases. We talked with teachers using design thinking in their classrooms and met with those that wanted a framework for creative work. Then we started to design and build out an idea. We highlighted what worked and kept on revising.

The end result was "The LAUNCH Cycle", a K-12 framework for design thinking in the classroom!

THE LAUNCH CYCLE IS THE FRAMEWORK

The LAUNCH Cycle is not a formula. It is not a step-by-step guide to being creative. However, we've used the LAUNCH Cycle framework to make creativity an authentic experience time and time again in our classrooms.

The LAUNCH Cycle outlines creative work from start to finish. From listening and learning, to navigating ideas, to highlighting what works, the LAUNCH Cycle builds capacity and clarity for teachers and students who are making, building, tinkering, and creating. The final piece of the LAUNCH Cycle is what sets it apart: actually launching your creation out into the world!

2. DESIGN THINKING IS USED (ALMOST) EVERYWHERE

Let's take a look at the growth of the term "design thinking" using Google's Ngram Viewer:

The term has jumped in explosive growth. Design thinking is used at universities, in organizations, by artists and designers, by engineers, and by many in the business/corporate world.

While design thinking was originally used in many cases to design products, it is now being used to tackle big problems in all kinds of sectors.

A recent article in the Havard Business Review titled, "Design Thinking Comes of Age", takes a look at the growth and how this design mindset has grown exponentially over the past few decades.

Wikipedia's article on Design Thinking is a wealth of resources from the timeline of use, to the different industries that are using it, to its influence on corporate structure.

David Kelley, who is the founder of the design firm IDEO as well as Stanford d.school's Institute of Design (and author of *Creative Confidence*) puts the benefits of design thinking into a simple statement:

"We moved from thinking of ourselves as designers to thinking of ourselves as design thinkers," he continues. "What we, as design thinkers, have, is this creative confidence that, when given a difficult problem, we have a methodology that enables us to come up with a solution that nobody has before."

Design thinking is used by so many varying industries because of this statement. It provides a methodology for creating innovative solutions to all kind of difficult problems.

3. DESIGN THINKING IN YOUR CLASSROOM

In IDEO's "Design Thinking for Educators" Toolkit they look at a number of different examples of design thinking in the classroom. Here's one example:

"The faculty at Ormondale Elementary School in California wondered if they were preparing their students well for the future. They decided it was time to corroboratively design an approach to teaching and learning that they felt was updated and relevant for the 21st century.

Collectively, they embarked on a design journey and came to an approach they call "Investigative Learning", which addresses students not as receivers of information, but as shapers of knowledge. The faculty continues to evolve and share this approach with new teachers through the creation of a Manual of Investigative Learning to keep track of their philosophy and methods. They have gained support from their school board, and have become recognized as a California Distinguished School.

The faculty at Ormondale Elementary School uses design to address the needs of their evolving student body."

This is the interesting thing about design thinking. It can be used for entire school problem-solving or projects in a specific classroom. At Mount Vernon School they've embraced design thinking as a way to scale authentic learning in younger grades (K-5) and upper grade levels (6-12):

"In 2014, a team of MVIFI (Mount Vernon Institute for Innovation) designers embarked on a design challenge to scale the DEEP methodology into tools for design thinkers to use. Inspired by IDEO and Stanford's d.school, this playbook has been used all over the country in various industries to inspire people-centered problem solving. We have decided to offer this playbook, which includes a design thinking introduction called a Flashlab, free of charge under Creative Commons Attribution-NonCommercial-ShareAlike License."

At Germantown Academy, Director of Innovation Gaby Russomagno has worked with staff to develop a design thinking mindset, and they've brought this work to the entire school in a yearlong challenge:

"In the Upper School, "Challenge GA" will be implemented as a year-long House competition involving the entire student body and faculty. An issue concerning the GA community as a whole will be presented and each House will be charged with designing and presenting its own solution. Throughout the year, Houses will use House Meetings, occasional assemblies, and outside school time to research, design, and construct viable solutions to the problem. At the end of the year, during a special assembly in April, each House will present its solutions to a panel of professional judges. A winning resolution will be selected, and the GA community will then work to implement the solution."

In each of these examples an entire school, department, or classroom will go through the stages of the LAUNCH Cycle to identify and solve problems with unique solutions. Here's the phases as we describe them in our upcoming book. *LAUNCH*:

L: Look, Listen, and Learn
In the first phase, students look, listen, and learn.The goal here is awareness. It might be a sense of wonder at a process or an awareness of a problem or a sense of empathy toward an audience.

A: Ask Tons of Questions
Sparked by curiosity, students move to the second phase, where they ask tons of questions. They can share these questions with friends, teachers, mentors, and the world (especially online sites like Quora).

U: Understanding the Process or Problem
This leads to understanding the process or problem through an authentic research experience. They might conduct interviews or needs assessments, research articles, watch videos, or analyze data. During this phase they are constantly putting their work out for others to look at and give feedback.

N: Navigate Ideas
Students apply that newly acquired knowledge to potential solutions. In this phase, they navigate ideas. Here they not only brainstorm, but they also analyze ideas, combine ideas, and generate a concept for what they will create.

C: Create a Prototype
In this next phase, they create a prototype. It might be a digital work or a tangible product, a work of art or something they engineer. It might even be an action or an event or a system.

H: Highlight and Fix
Next, they begin to highlight what's working and fix what's failing. The goal here is to view this revision process as an experiment full of iterations, where every mistake takes them closer to success. As they share what they've made, the feedback they receive will be key to the revision process.

Launch to an Audience

Then, when it's done, it's ready to launch. In the launch phase, they send it to an authentic audience. They share their work with the world!

This was the piece of the 20% Project and future projects I did with my students (like Project: Global Inform, 2030Schools, Flat Classroom Project, NetGen Ed Project) — that took it to the next level!

Students can't solve problems and create solutions only to share it with 20 other people. They've got to take the final step of launching it into the world to a real authentic audience.