



Creating a Vision and a Plan for Innovation

East Greenbush Central School District

TODAY'S SESSION GOALS

- Defining and designing a comprehensive technology plan (Setting the stage for our work)
- Identifying collaborators
- Beginning the process of ideation



"First law of improvement"

Every system is perfectly designed to get exactly the results that it gets

BE THE CHANGE YOU WISH TO SEE IN THE WORLD



IMPACT

Why technology?

Why do we do what we do?

For What purpose?

For what ends?

If we hadn't inherited it, would we do it this way?- Peter Drucker

Which way is North?





Innovation

**Student Centered
Learning**

Community Schools

Condensation Symbols

A situation in which the same concept is used carelessly and gains multiple meanings.



“

When people talk about innovation in this decade, they really mean design.

Bruce Nussbaum, editor, BusinessWeek

RUHA BENJAMIN

- Adopting technology while acknowledging the need for an awakened citizenry.
- The nexus of innovation and equity as imagination.
- Designing alternatives to the status quo of gaming or hacking the system of life.



“

*Fostering equity in education as much about **access** as it is about **design**.*

Why is it that we can imagine growing heart cells from scratch in a lab, but not growing empathy from other human beings in our everyday lives, and even more, in our institutions?

Ruha Benjamin, Princeton University

CASE™ Score Legend

● Beginning

● Emerging

● Proficient

● Advanced

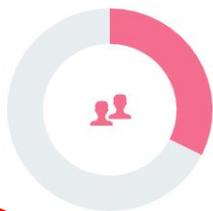
● Exemplary

Show More +

CASE™ Score

1052 Proficient ↗ Up since last data collection

Classroom



Use of the 4Cs

Teachers

Students

Digital Citizenship

Teachers

Students

Assessment

Assistive Technology

Access



Access at School

Teachers

Students

Access at Home

Teachers

Students

Skills



Foundational

Teachers

Students

Online

Teachers

Students

Multimedia

Teachers

Students

Environment



The 3Ps

Support

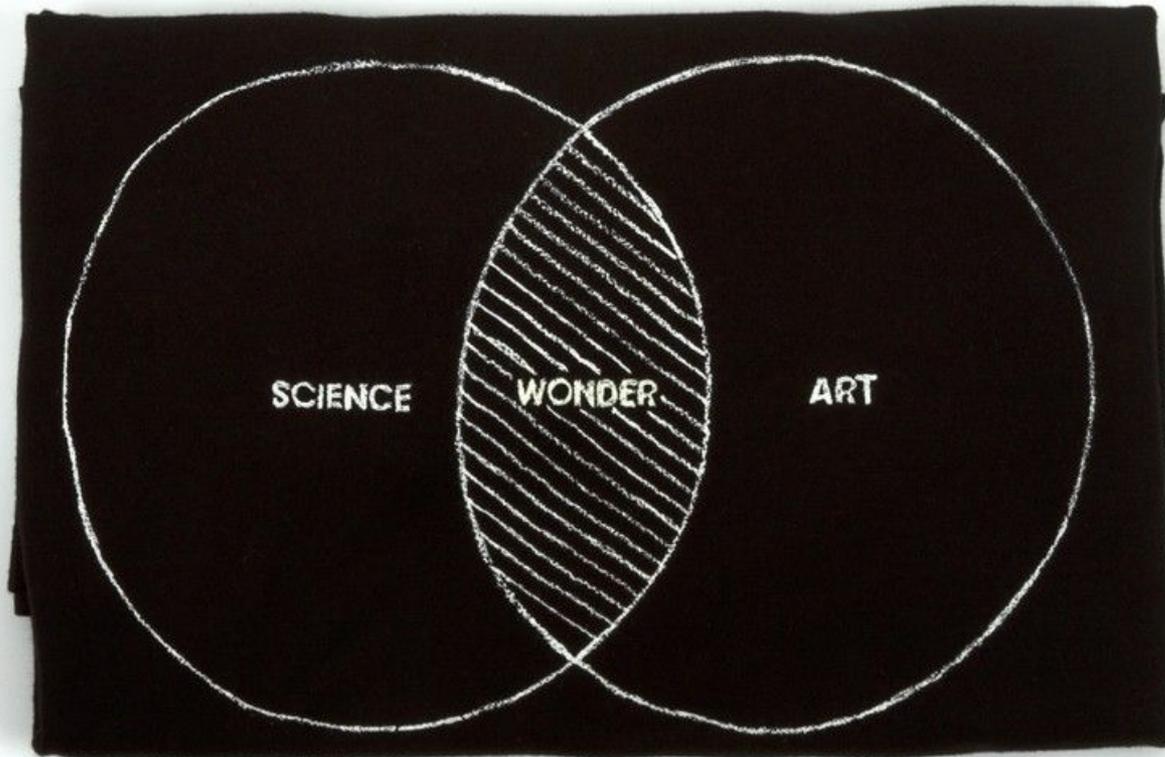
Professional Learning

Beliefs

SPARK

Most of us look around at the world and see **what is**. Designers have an uncanny knack for envisioning what **might be**. But what inspires these fresh visions of new possibilities? What causes them to begin to take shape?





**Explicit vs. Implicit
Methods vs. Magic**

PROCESS

1. Discovery

Choose an affirmative, strategic topic.
Gather data. Understand & empathize
with unmet needs.

2. (Re)Frame opportunity

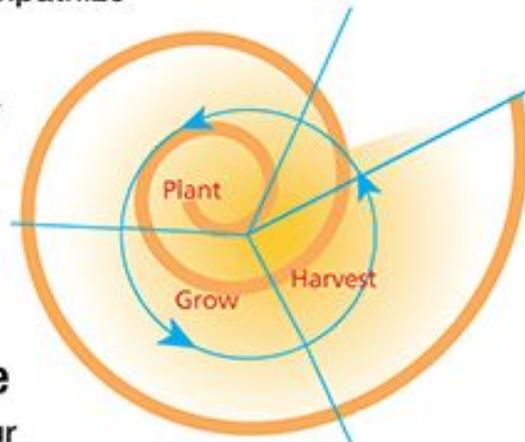
Look for patterns & insights.
Question assumptions.
Frame your POV. Define
your scope.

3. Incubate

Switch gears. Feed your
brain with diverse
stimuli. Meditate. Sleep
on it.

4. Ideate/ illuminate

Experiment. Explore possibilities.
Envision a desired future. Co-create
in diverse team. Make your ideas
visible.



8. Iterate & Scale

Evaluate. Learn. Create. Innovate.

7. Deliver

Final testing, approval and launch.

6. Rapid Prototype /test

Think big, act small, fail fast; learn from
end-users and refine.

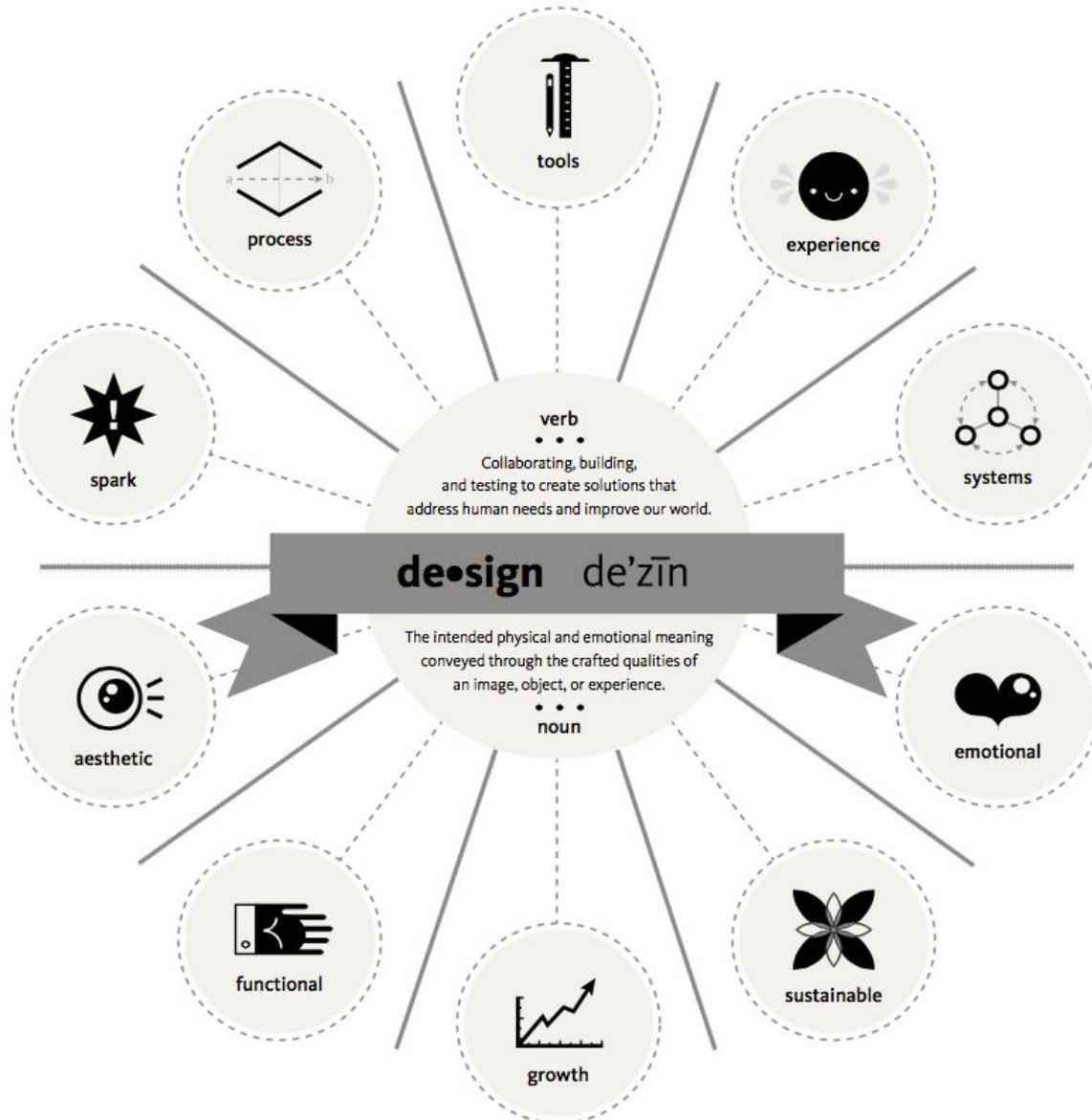
5. Evaluate/Refine ideas

What is desirable, feasible, viable
about your ideas? What are the constraints?

ELEMENTS OF DESIGN

Ten essentials of good design

No simple checklist of qualities can define design. Good design emerges from the elements of the design process—design as a verb—and through considering each element of a designed object—design as a noun.



CREATING IMPACT

Project H looks beyond products to create impactful humanitarian design solutions

Emily Pilloton's Project H aims to broaden design's social and human impact. Its six tenets of design focus on solving the world's real problems and on helping to put new tools in the hands of those who need them. According to Pilloton, this requires a shift in the way designers think about their work and who it serves, leading to a broader concept of design as something that grows from the bottom up to transform lives.



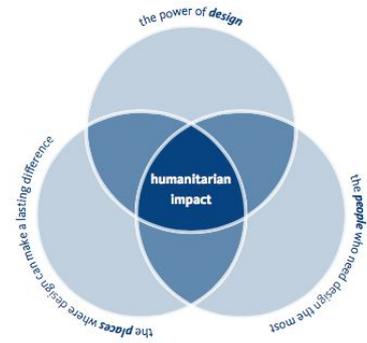
A Shift in Focus

In order to maximize the positive impact of design, fundamental shifts in focus need to occur.



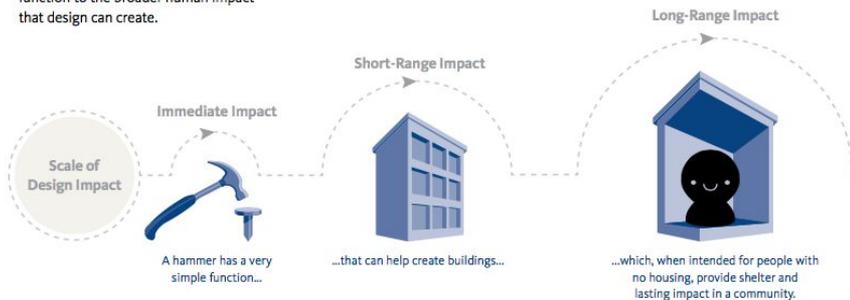
Creating Impact

When good design reaches underserved places and people, it creates meaningful humanitarian impact by empowering those communities.



Beyond Objects

Designers should look beyond form and function to the broader human impact that design can create.



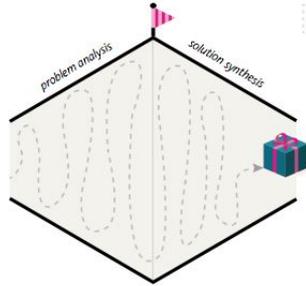
SIX DESIGN PROCESSES

Diagramming the ways we design

These illustrations represent the most common design processes. Some are suited to solo or small-team projects, while others are tailored to large, complex projects with multiple stakeholders and outcomes.

Diverge & Converge

At some point, most design processes incorporate this fundamental archetype of analyzing a question, expanding on possible solutions, then synthesizing those possibilities down to an optimal solution— even if that solution is another question.

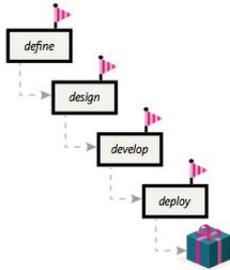


word clouds reflect the emphasis of each archetype

critique analysis
 exploration synthesis iteration
 experimentation prototyping
 innovation

Waterfall

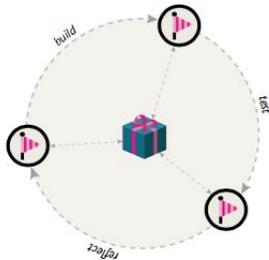
In this archetypal linear process, a design project moves from one distinct phase to the next only after the previous one is complete. This approach, which is commonly used in software design, often focuses on implementing variations of previously tested design solutions.



innovation
 experimentation analysis
 critique iteration
 collaboration exploration
 synthesis prototyping

Cyclical

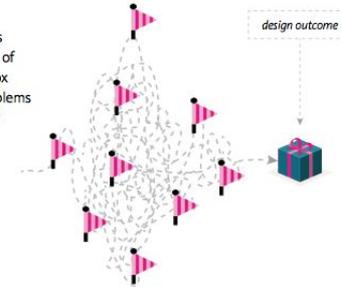
The cyclical process emphasizes prototyping, testing, and reflecting on results before beginning the cycle again. This process is suited to incorporating feedback at each step on the cycle, which can keep the design user-focused.



exploration
 iteration prototyping
 analysis synthesis
 innovation collaboration
 critique experimentation

Discovery

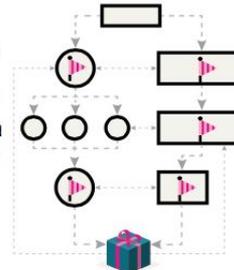
The least structured design process is about broad exploration, a multitude of prototyping methods, outside-the-box thinking, and discovering design problems and solutions in unexpected, unlikely places.



innovation
 experimentation
 iteration critique
 prototyping
 collaboration
 exploration
 analysis synthesis

Complex Linear

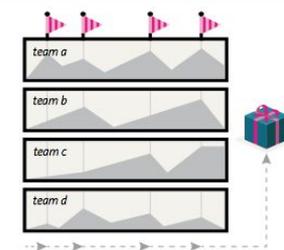
Complex linear design processes involve projects where multiple designers may be creating multiple outputs at various stages, which impact the outputs of other designers. Projects that depend on this process often have many stakeholders and designers moving toward a common goal.



innovation
 iteration analysis
 experimentation
 collaboration
 exploration prototyping
 critique
 synthesis

Matrix

The matrix process is common on large projects that require multiple teams to collaborate while working in parallel. Communication through regular small-group meetings and occasional all-team meetings is key to making this process successful.



collaboration
 innovation iteration
 analysis prototyping
 synthesis
 experimentation
 critique
 exploration

INTEGRATIVE DESIGN

Rocky Mountain Institute's Factor Ten Engineering Principles

The Rocky Mountain Institute's Factor Ten Engineering Principles underpin the practice of integrative design, which can yield radical resource efficiency. Integrative design optimizes a system as a whole, rather than its parts in isolation. Teams apply the Factor Ten Engineering Principles throughout a collaborative design and build process, divided into three stages: Ready, Set, Go.



PHASES

1

DISCOVERY



I have a challenge.
How do I approach it?

2

INTERPRETATION



I learned something.
How do I interpret it?

3

IDEATION



I see an opportunity.
What do I create?

4

EXPERIMENTATION



I have an idea.
How do I build it?

5

EVOLUTION



I tried something new.
How do I evolve it?

STEPS

1-1 Understand the Challenge

1-2 Prepare Research

1-3 Gather Inspiration

2-1 Tell Stories

2-2 Search for Meaning

2-3 Frame Opportunities

3-1 Generate Ideas

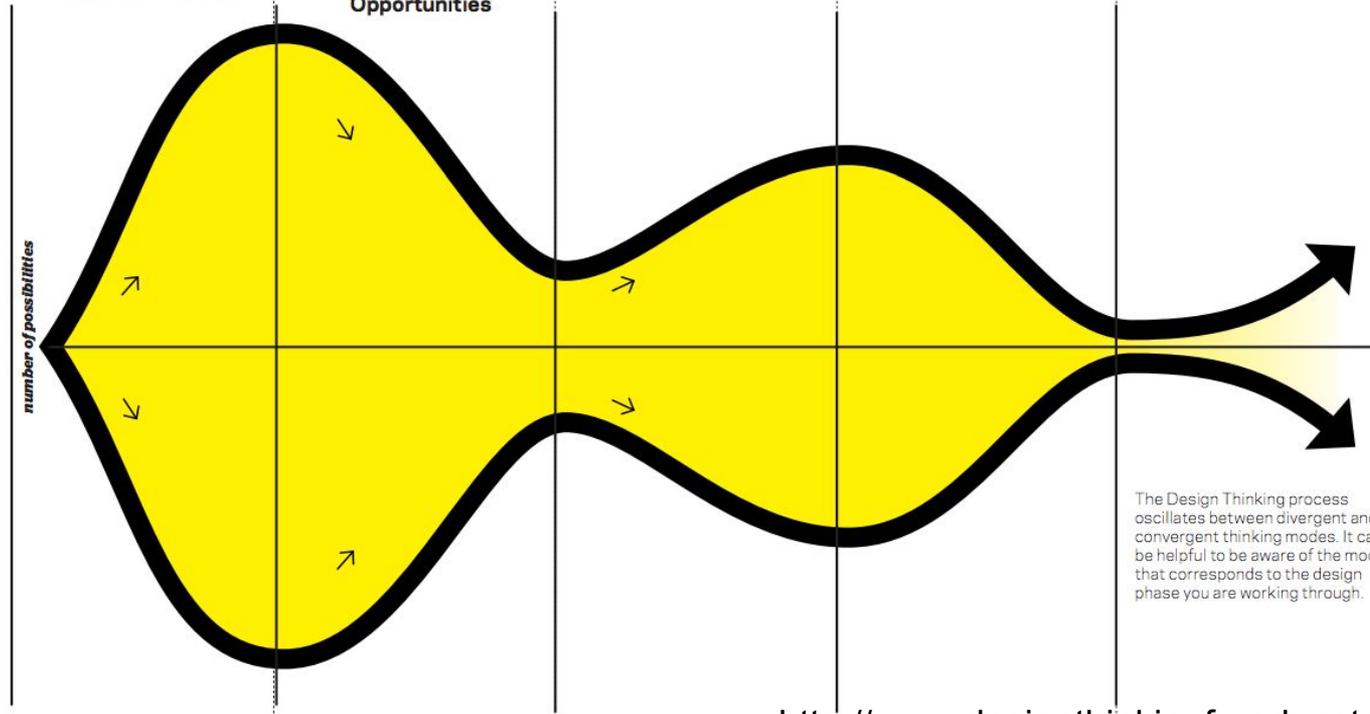
3-2 Refine Ideas

4-1 Make Prototypes

4-1 Get Feedback

5-1 Track Learnings

5-2 Move Forward



The Design Thinking process oscillates between divergent and convergent thinking modes. It can be helpful to be aware of the mode that corresponds to the design phase you are working through.



DESIGN THINKING IS A MINDSET.

Design thinking is about believing we can make a difference, and having an intentional process in order to get to new, relevant solutions that create positive impact.

MINDSET IN DESIGN IS
THE SECRET SAUCE



DESIGN THINKING IS A MINDSET.

It's Human-Centered

It's Collaborative.

It's Optimistic.

It's Experimental.

Design Thinking gives you faith in your creative abilities and a process for transforming difficult challenges into opportunities for design.



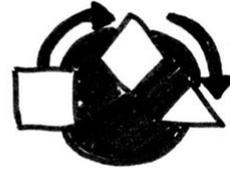
MINDSET



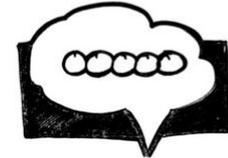
FOCUS ON
HUMAN VALUES



SHOW
DON'T TELL



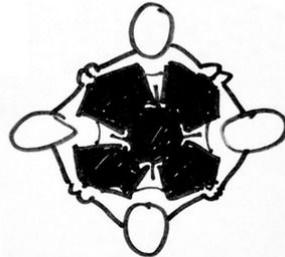
EMBRACE
EXPERIMENTATION



BE MINDFUL
OF PROCESS



BIAS TOWARD
ACTION



RADICAL
COLLABORATION



CRAFT CLARITY

d.MINDSETS



If we stop feeling like we will make a
difference... we won't.

Bill Anders,
Principal of Craig Elementary School in Niskayuna New York

MINDSET

What does “find your voice” mean in terms of leadership?

What does “find your voice” mean for students?



VOICE & CRITICAL LEADERSHIP

Whose voices are missing when decisions are being made about technology? When we design?

Starratt (1993) “hermeneutics of suspicion”- a way of questioning:

- Whose interests are being served by this point of view?
- Who is in charge of defining the world as working in this particular way?
- What perspectives are left out?
- What are the relationships of this knowledge with social and political power?



“

We can't simply prepare our students to "succeed" in the world as it is - playing and winning at the game of life. We have to develop and hone new social technologies that will help transform the status quo.

Ruha Benjamin, Princeton University

VOICE, IDENTITY & HACKING THE SYSTEM

- From code switching to re-writing codes
 - Moving through different social worlds with unspoken rules of interaction are not parallel but stratified in judgment and scrutiny by those who have power.
- Gaming: Recreation, competition, and consumption
- Hacking: Mastery, collaboration and creativity

POWER

Think of a time when you felt powerful and a time when you felt powerless as a result of what someone said or did. Describe specifically what the person said or did in each situation. What was the effect on your emotional state? Your morale? Your performance?



Ideation

How are ideas generated? Where? Who creates them? How are they shared? Why does this matter?

■ Paul Romer

- Romer, P. M. (1992). Two strategies for economic development: using ideas and producing ideas. *The World Bank Economic Review*, 6(suppl 1), 63-91. (Growth comes from ideas)
- Meta- Ideas: A recipe for social interaction that encourages the transmission of ideas.
- Urbanization

SOCIAL INNOVATION

Good ideas put to practice

<http://www.tvcog.net/>

<http://nyc.socialinnovation.org/>



**THE CENTRE FOR SOCIAL INNOVATION IS
A COWORKING SPACE,
COMMUNITY
AND LAUNCHPAD
FOR PEOPLE WHO ARE
CHANGING THE WORLD.**



Salvatore Iaconesi “crowdsolved” his brain cancer.

Crowd Solving

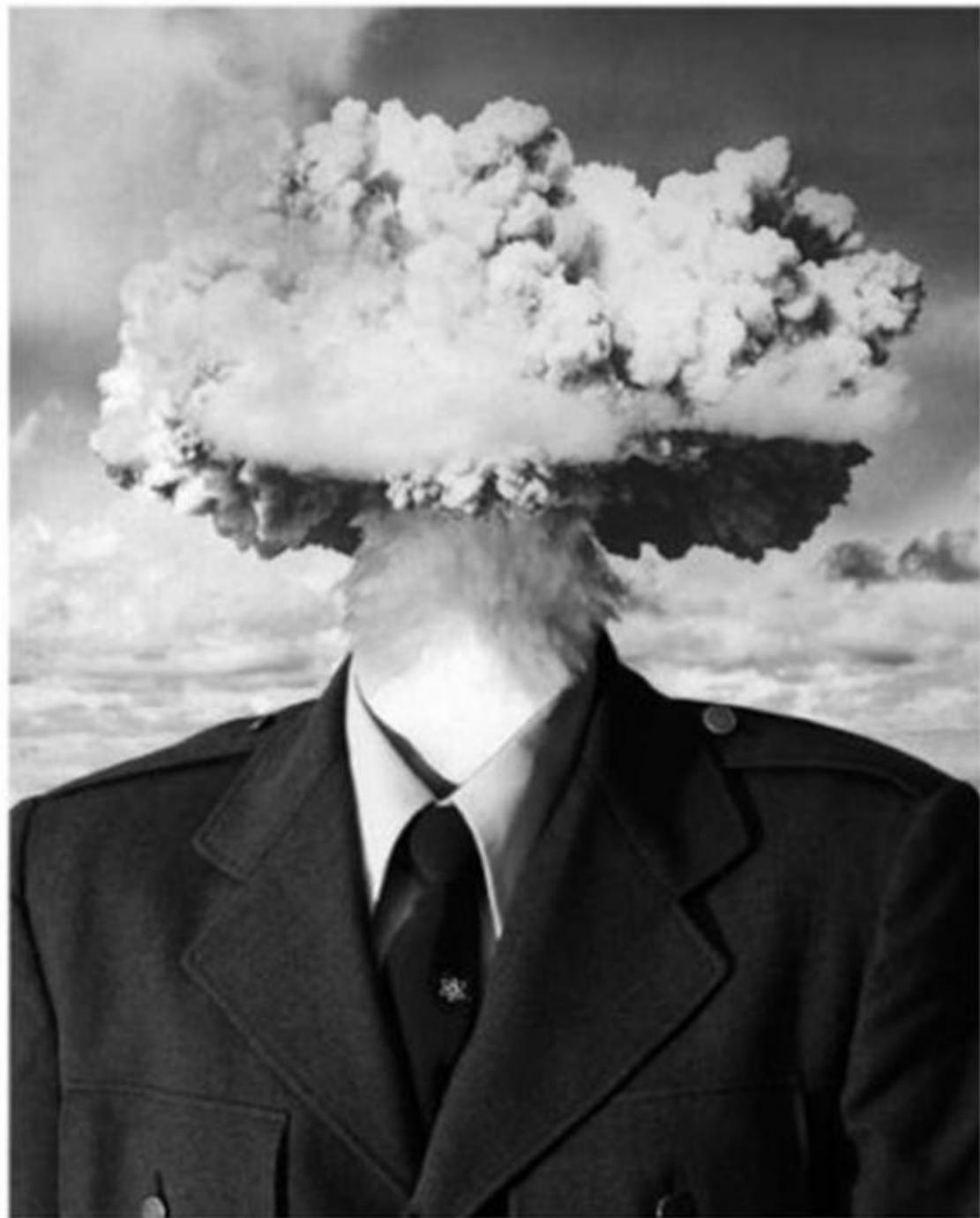
<http://www.mccormick.northwestern.edu/news/articles/2014/02/using-crowdsourcing-to-solve-complex-problems.html>

This is what happened when an individual put his medical records online and crowd solved his brain cancer with a worldwide team. Imagine what we could do!

https://www.ted.com/talks/salvatore_iaconesi_what_happened_when_i_open_source_d_my_brain_cancer?language=en

<http://opensourcecureforcancer.com/>

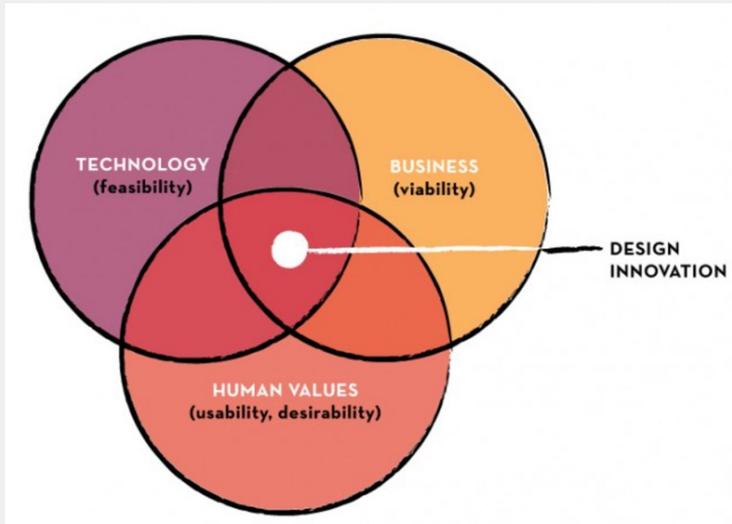




EXPERIENCE

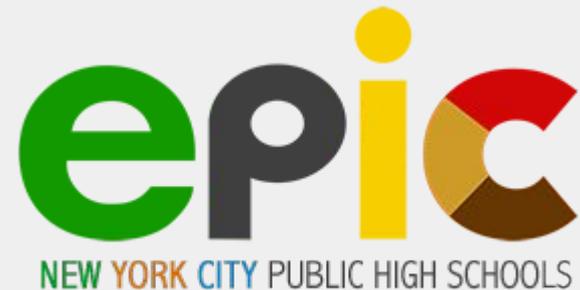
- The d.school

- <http://dschool.stanford.edu/>



- EPIC

- <http://epicschoolsnyc.org/>
 - COMPETENCY-BASED
 - CULTURALLY RESPONSIVE
 - HUMAN-CENTERED
 - INTEGRATED



UM, BUT WHERE'S THE TECHNOLOGY?



<http://www.schrockguide.net/online-tools.html>

App Selection Criteria

from the APPLIC App Lists for Education Website

Understanding: Apps that fit into this "understanding" stage provide opportunities for students to explain ideas or concepts. Understanding apps step away from the selection of a "right" answer and introduce a more open-ended format for students to summarize content and translate meaning.

Understanding Criteria

Remembering: Apps that fit into the "remembering" stage improve the user's ability to define terms, identify facts, and recall and locate information. Many educational apps fall into the "remembering" phase of learning. They ask users to select an answer out of a line-up, find matches, and sequence content or input answers.

Remembering Criteria

Applying: Apps that fit into the applying stage provide opportunities for students to demonstrate their ability to implement learned procedures and methods. They also highlight the ability to apply concepts in unfamiliar circumstances.

Applying Criteria

Analysing: Apps that fit into the "analysing" stage improve the user's ability to differentiate between the relevant and irrelevant, determine relationships, and recognize the organisation of content.

Analysing Criteria

Evaluating: Apps that fit into the "evaluating" stage improve the user's ability to judge material or methods based on criteria set by themselves or external sources. They help students judge content reliability, accuracy, quality, effectiveness, and reach informed decisions.

Evaluating Criteria

Creating: Apps that fit into the "creating" stage provide opportunities for students generate ideas, design plans, and produce products.

Creating Criteria

Immersive Learning at the core of the wheel is the New Instructional Design

Simulations are the most effective pedagogy to develop graduate attributes and capabilities in learners, as well as address motivation. Please visit these Immersive Learning Resources which will help you design an build engaging experiential-based immersive scenarios.

<http://tinyurl.com/ILMSimulations>

The Pedagogy Wheel V4.0

<http://tinyurl.com/posterV4>

How to use the Pedagogy Wheel:
It's All About Grey-matter Grids

A methodology to get the best results with this teaching model

APPtic
<http://appitic.com>

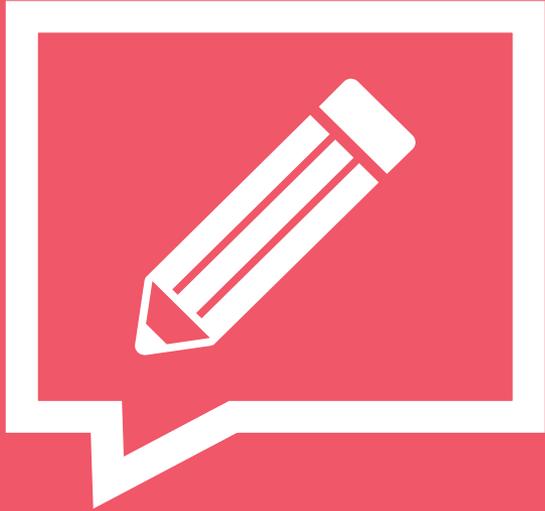
is a comprehensive online directory of apps for education, developed by Apple Distinguished Educators (ADEs) and is available in 19 languages. The website identifies 400 Apps by the Blooms Cognitive Domain Categories with 122 of the most popular apps individually linked from the Pedagogy Wheel

Developed by Alan Carrington
Designing Outcomes Adelaide SA
Email: alan@designingoutcomes.com.au

Standing on the Shoulders of Giants

This Taxonomy wheel, without the apps, was first discovered on the website of Paul Hiepin's educational consultancy website [paulhiepin.com](http://www.paulhiepin.com). That wheel was produced by Sharon Arley and was an adaptation of Kathwohl and Anderson's (2001) adaptation of Bloom's (1956). The idea to further adapt it for the pedagogy possibilities with mobile devices, in particular the iPad, for V2.0 and V3.0 I have to acknowledge the creative work of Kathy Schrock on her website [SchrockGuide](http://www.schrockguide.net). For the major revision that is V4.0 I have to thank the team of ADEs who created [APPtic: The App Lists for Education Website](http://www.appitic.com).

The Pedagogy Wheel by Alan Carrington is licensed under a Creative Commons Attribution 3.0 Unported License. Based on a work at <http://www.appitic.com>.



Does design matter?

The answer becomes most clear when we are confronted with the failure of design.



CURRICULUM

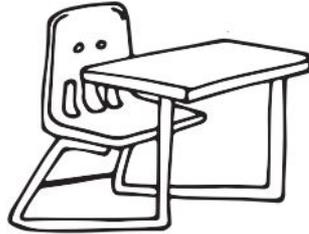
Every day you design ways to interact with your students around content. You can follow a design process to be more intentional about connecting this content to the interests and desires of today's learners by finding out more about the things that they do outside of school and connecting that to the content you are bringing to them.

How might I inspire students to engage in concerns of the environment?

How might I engage my students in compelling ways around learning world history?

How might I develop students to be active seekers of knowledge in subjects that they have little knowledge of?

How might I help children from disadvantaged backgrounds increase their vocabulary?



SPACES

The physical environment of the classroom sends a big signal about how you want your students to behave. Right now we tend to think of our classroom spaces as standard... kids in rows, sitting in desks. By rethinking the design of our spaces, we can send new messages to our students about how they should feel and interact in the classroom.

How might I use my classroom space in different ways to help set my students at ease?

How might I create a comfortable space that meets the many needs my students have throughout the day?

How might we reimagine our school's library for the needs and interests of today's learner?

How might we create an exciting and effective space for teachers to collaborate?

How might we design our high school campus to best engage and support today's learner?



PROCESSES AND TOOLS

Your school has already designed a set of processes or tools that may or may not be setting up your school for success. This is typically outside of the classroom and specific interactions around learning, and more around how the system operates. Every process is already designed, and thus can be redesigned! Sometimes creating tools can be essential to supporting newly designed processes.

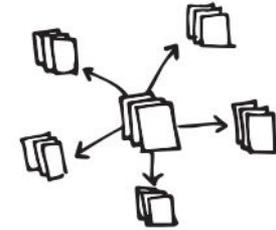
How might I engage parents as an integrated part of their students' learning experience?

How might we recruit the best teachers to our school?

How might we re-envision arrival and departure procedures at our school?

How might we design ways to keep ourselves balanced and well?

How might we redesign our school schedule to be centered around the needs of today's families and teachers?



SYSTEMS

Not everyone can always make decisions for the system that they exist within, but everyone can contribute to the design of that system. Designing systems is about balancing the complexity of many different stakeholder needs with the needs of the operation. When designing systems, we're often setting high-level strategy such as stating visions, priorities, policies, and key communications around these ideas.

How might we reinvision curriculum for an entire district while providing for individual schools' differences?

How might we track the development of students' character traits over time to help shape our school philosophy more intentionally?

How might we connect more with our neighborhood community?

How might we use our school as an R&D hub for schools nationwide?

NEXT

- Determine who and how to reach out to varied stakeholders
- Review our current plan
- Identify exemplars

JOB TITLE, DESIGNER.

Designing our Vision. Our Plan.

- Consuming vs. Creating
- Who is at the table now? Who is missing?
- How might we?
- Review our current plan
- Identify exemplars



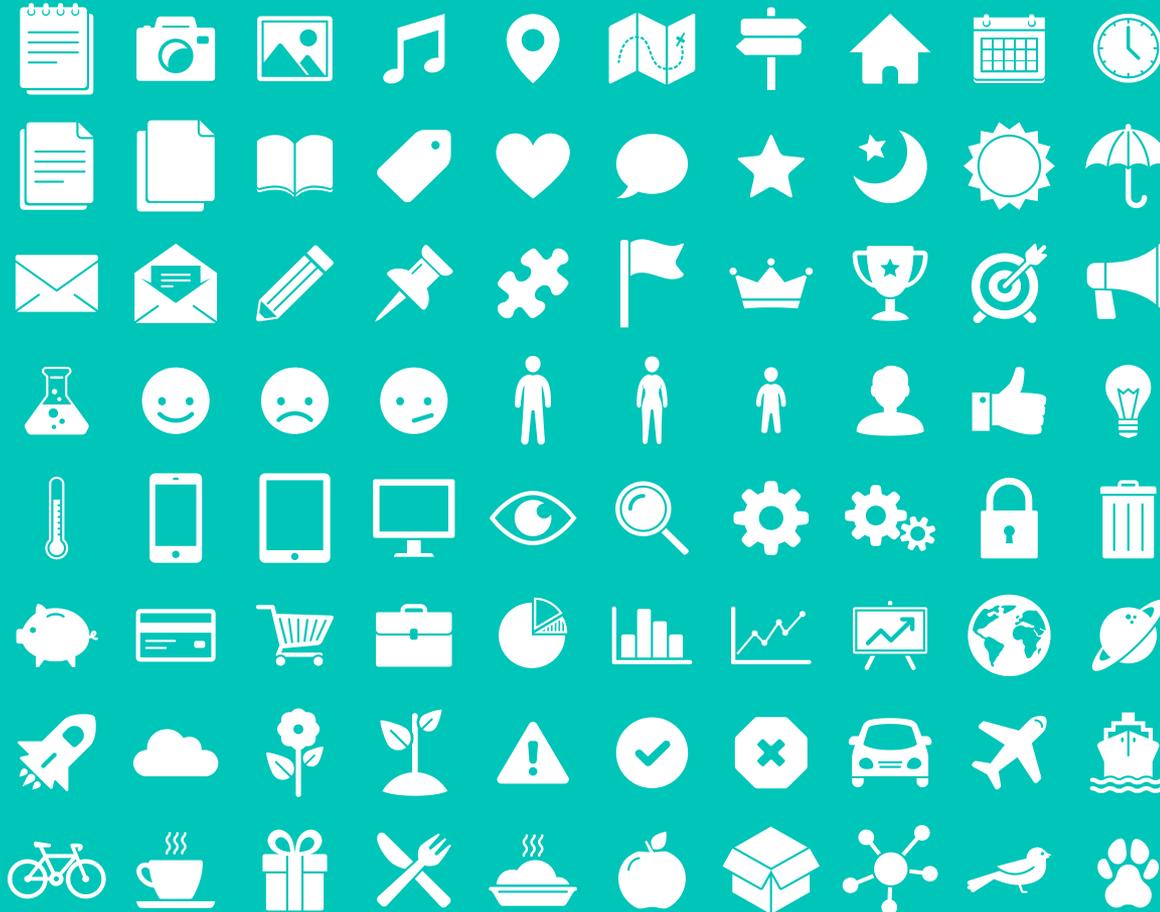
Connect and Collaborate

Lisa Cala Ruud

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SlidesCarnival icons are editable shapes.

This means that you can:

- Resize them without losing quality.
- Change fill color and opacity.
- Change line color, width and style.

Isn't that nice? :)

Examples:

