Design Thinking

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Do Now:
Consider a challenge, problem or issue you want to tackle.
List 3 words that describe Design Thinking __________ __________ __________
Design Thinking

... IS A MINDSET AND A CREATIVE PROCESS THAT UTILIZES DEDUCTIVE, INDUCTIVE AND ABDUCTIVE THINKING.

... IS DIVERGENT THINKING.

... ARE PROCESSES TO FIND AND SOLVE VISUAL AND REAL-WORLD PROBLEMS.

... IS A HUMAN-CENTERED PROBLEM SOLVING PROCESS.
Inductive: generalize existing ideas
Deductive: narrow down existing choices
Abductive: create space to generate new ideas
Students bring material from a variety of sources to bear on a problem, to produce the "correct" answer. This kind of thinking is particularly appropriate in science, maths and technology. A form of thinking which standardised intelligence tests can test.

The student's skill is in broadly creative elaboration of ideas prompted by a stimulus, and is more suited to artistic pursuits and study in the humanities. Suited for open-ended tests.
DIVERGENT THINKING IS A THOUGHT PROCESS OR METHOD USED TO GENERATE CREATIVE IDEAS BY EXPLORING MANY POSSIBLE SOLUTIONS.

CONVERGENT THINKING GENERALLY MEANS THE ABILITY TO GIVE THE "CORRECT" ANSWER TO STANDARD QUESTIONS THAT DO NOT REQUIRE SIGNIFICANT CREATIVITY.
Design thinking is.....

LEARNER-CENTERED ART + DESIGN.

IT DEVELOPS A BALANCE OF CREATIVE & CRITICAL PRACTICAL SKILLS & DISPOSITIONS.

IT IS ACTION ORIENTED/ACTIVE LEARNING.

IT IS PROCESS ORIENTED/INQUIRY DRIVEN

IT IS DECENTRALIZED POWER: TEACHER DESIGNS & STUDENTS SELF-DIRECT

IT IS CREATIVE PROBLEM SOLVING WITH HUMAN-CENTERED FOCUS

IT IS CONNECTED LEARNING AND MULTIDISCIPLINARY

CARROLL ET AL, 2010
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"the arts especially address the idea of aesthetic experience. an aesthetic experience is one in which your senses are operating at their peak; when you’re present in the current moment; when you’re resonating with the excitement of this thing that you’re experiencing; when you are fully alive."

― KEN ROBINSON
• 92% of employers believe innovation is essential to their company’s continued success (AACU survey 2013)

• 71% of employers think more curricular emphasis should be placed on innovation and creativity (AACU survey 2013)

• More than 60% of CEO’s said that the top quality that they were looking for in an employee was creativity (IBM study 2010)

WHY? EMPLOYERS SEEK CREATIVITY
What we need to encourage, teach, expect?

- Active learning
- Integrative learning
- Intellectual balance
- Collaboration
- Independence and self-direction
- Self-motivation
- Risk taking
• Design Thinking aims to foster innovation by elevating participants’ creative thinking abilities.

• Design Thinking applies to life, other classes, subjects taken in class.

• Design Thinking engages various learning styles, taps into natural abilities, helps overcome fears, finds focus & inspiration.
What are the obstacles? Problems?

- Fear of failure
- Lack of self directed learning
- Traditional values that suppress creativity
FAILURE IS ONLY THE OPPORTUNITY TO BEGIN AGAIN, ONLY THIS TIME MORE WISELY.
How can art and design instruction and classroom culture best develop students’ skills and dispositions for creativity/innovation, critical thinking and practical intelligence?

How can educators best prepare students for the world in which we live – one in which self-direction, creative confidence and connection-making are imperative?
The Perfect Activity to Start Your School Year

www.theartofed.com
One favorite activity in the book is called “Material Mark Cards.” This activity would be a powerful choice to include during your first few weeks of school. The project is a fantastic blend of observational drawing and experimentation and will introduce skills that your students can build on all school-year long. In addition, it’s low-pressure, so all students will be excited to jump in.
You could adapt this for a classroom full of students in so many ways. For example you could...
Have each student create one or two cards and combine them to create a reference set for each class.
Have each student create their own mini-deck of the top 5 materials they’ll use in your classroom.
Glue the observational drawing and corresponding marks to separate cards to create a memory game.
Create a large-scale collaborative installation with the results.
Link words and play with connections.

What do water and glass have in common?
How do Ants and traffic connect?
Playing With Connections

Connecting formerly unconnected topics is another muscle that students need to exercise. Here is an activity that aims to build that skill. Make two lists of random objects, and ask your students to find connections between one word from each of the lists. Explore the linkages. They might be very entertaining. And again, there is no wrong answer.

Here is an example:

Water          Traffic
Ants           Crayon
Circle         Glass

For instance, students might find that both water and glass give a reflection. For circle and crayon, students might suggest that crayons should be shaped like hockey pucks. For ants and traffic, your pupils may make the connection that they both behave like a swarm. And so on. Make a game out of the activity, and have students share with others their connections.

By the way, researchers have recently found that ants can give us insight into how to prevent traffic jams. (See, Janusian thinking works!)
Encouraging the Einstein and Edison in Everyone
The 21st century will require solutions that are fashioned differently from how the problems were made. The solutions of this century will come from creative people who are willing to look at doing things differently. As such, the future will need more Albert Einsteins and Thomas Edisons -- and by the way, there is a bit of them in all of us.

http://www.designthinkingforeducators.com
Resources & Recommendations

K–12 teachers now have free online access to object-based lesson plans inspired by collections at the RISD Museum and Nature Lab.

http://www.design-ed.org
PK-12 SCHOOL RESOURCES

K-12 SCHOOLS WITH DESIGN PROGRAMS AND CLASSES

*The Design Architecture Senior High (Miami)*
*The Charter High School for Architecture and Design*
*The Design Lab Early College High School in Cleveland*
*Cleveland School of Architecture and Design in Cleveland*
*The New Design High School in Manhattan*
*The Urban Assembly School of Design and Construction, Manhattan*
*Williamsburg High School for Architecture and Design, Brooklyn*
*Henry Ford Academy, Detroit*
*Da Vinci Design School, Hawthorne, CA*
*Art and Design High School, Manhattan*
*High School of Fashion Industries*
*Early College High School of Design*
*New Orleans Architecture High School, New Orleans*
*Baltimore Design School*
*Olathe East Environmental Design*
*UC Tech School of Design*
K-12 DESIGN EDUCATION
LESSON PLANNING HELP

The Partnership for 21st Century Skills
Art Center College for Design
Dr. Marty Rayala's Design Education blog
The Cooper-Hewitt, National Design Museum
The Cooper-Hewitt/Educator Resource Center
The Cooper-Hewitt/Target Design K-12: Design in the Classroom
The Cooper-Hewitt/DesignPrep: Teen Programs
PBS Design Squad
Stanford's d.school blog
Sir Ken Robinson's blog
Learning By Design in Massachusetts
NAEA's lesson planning page
The Getty Museum's Education Resources
The Center for the Built Environment
NEXT.cc
Design to Improve Life
HIGHER ED RESOURCES
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DESIGN SCHOOLS

Academy of Art
The Art Institutes
California College of the Arts
Kean University's Busch School of Design
Parsons the New School For Design
Rhode Island School of Design
School of Visual Arts
Stanford's d.school

PROFESSIONAL DESIGN ASSOCIATION ED LINKS

AIGA
Art Director's Club
ICOGRADA
Industrial Designer's Society of America
Type Director's Club
National Art Educator's Association
DESIGN-ED RESOURCES

TOP DESIGN ED BOOKS
The use of Amazon here is for reference only.

*The Education of A Graphic Designer*
*Teaching Graphic Design*
*Illustration: A Visual History*
*Megg's History of Graphic Design*
*A Whole New Mind*

RELATED DESIGN ED MEDIA
*TED - Ideas worth spreading*
*Big Think*

STEAM RESOURCES
*RISD's STEAM Initiative*
*Georgette Yakman's website*
*OER's STEAM Lesson Plan collection*
*National Alliance for Media Art & Culture*
*New Jersey Technology & Engineering Educators Association*
*Change the Equation*
*FREE Water Wonders book by Peter Reynolds!*
*Studio H's work in Bertie, NC*
*The National Museum of Natural History's SPARKlab*
DESIGN PUBLICATIONS

CMYK Magazine
DeZeen
Eye Magazine
Fast Company
GOOD Magazine
HOW Magazine
Imprint
Metropolis
Print Magazine
Taxi

WRITTEN WORDS ON DESIGN EDUCATION

Design Education as Community Outreach and Interdisciplinary Study
Joseph Schwartz Makes the Case for K-12 Design Education
DESIGN-ED at the 2012 IDSA Design Education Symposium

DESIGN AND DESIGN ED BLOGS

Design Observer
Steven Heller's blog
Design To Improve Life (Denmark)
MAJOR DESIGN EDUCATION
INFLUENCES

Leon Friend
David Kelley
Roger Martin
Richard Wilde
Design Thinking

RBLANK@UARTS.EDU
Workshop Stations:
1. Portraits
2. Box Art
3. Furniture
4. Tools
5. Jewelry
Portrait pieces

- Create a portrait using one material.
- The positive/negative space will uniquely give shape to your portrait.
- Take a photo of the finished piece of art.
- Return materials to containers.
Box Top

• Create a graphic design on the box top of your Tool Box.
• Tools & Materials available: Black Paper, Scissors, Glue Stick
• Choose one slip of paper from each envelope to guide you (Elements of Art & Principles of Design).
• Use the Design Thinking cards to brainstorm & organize your thoughts.
Furniture design

• Create a chair with your index card.
• Consider stability.
• Scissors available
• Use the Design Thinking cards to brainstorm & organize your thoughts.
Create a tool

• Create a tool to assist a student with special needs in the art classroom.
• Consider disability.
• Use recycled materials.
• Use the Design Thinking cards to brainstorm & organize your thoughts.
Found Object Jewelry

- Using your favorite found objects create a piece of jewelry.
- Use recycled materials to make a unique piece of jewelry that represents something you identify with personally or professionally.
- Use the Design Thinking cards to brainstorm & organize your thoughts.
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