

16 Ideation

Wednesday, March 3, 2021

1:38 PM

Today

Universal Principles of Design (UPD)

Contour Bias

Shadows and 2 pt perspective

-or-

Ideation techniques

Brainstorm brainstorming

Linear techniques

Intuitive techniques



Poll:

- A) I know what I'm making for my main project
- B) I've got some ideas, but still need to narrow it down
- C) Too many ideas right now
- D) Not enough ideas, nothing feels right
- E) Haven't started thinking about it yet.

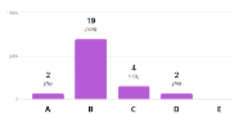
Do you want to see ideation techniques in class today?

Ideation techniques

Brainstorm brainstorming

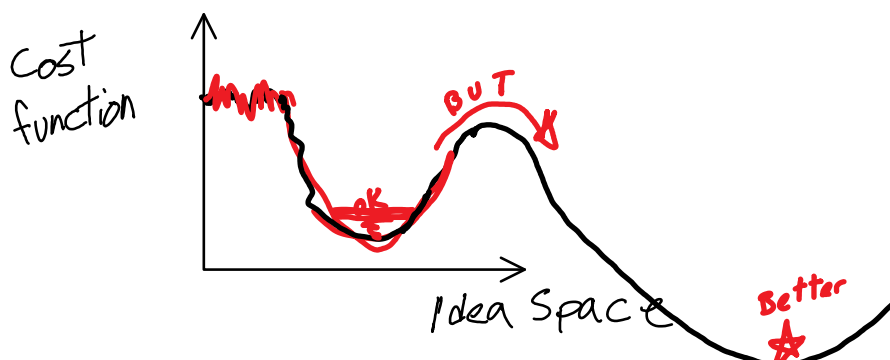
Linear techniques

Intuitive techniques



- A) Yes please!!
- B) Sure. Can't hurt
- C) whatever
- D) No thanks, let's move on.

Ideation/Brainstorming



Your initial idea may be good, but you may get a better one if you press on,
and keep generating ideas

Benefits of ideation

- Never hurts
- Can lead to new solution
- Can lead to better solution
- Can lead to an awesome solution for some *other* problem
- Even if nothing comes of it, can add meaning to your original solution

Ideation Techniques

Brainstorming: What have you been exposed to?

- Write everything down as it comes, even if it isn't that good
- No idea is bad, can still provide something useful
- Build on other ideas
- Don't settle on any idea until you have at least 100 to choose from
- Fail early and fail often
- Write out obvious ideas first to clear space for the next
- Let ideas simmer, then take a shower
- The shower is a magical place, take lots of showers
- Running or hiking, being in motion and not thinking helps
- Just before sleep, be ready to get up and write it down
- Start with easy google search
- If you have a basic idea or two, talk to folks for other viewpoints
- Looking at something from as many perspectives as possible, even unrelated ideas
- Reading any book, just sitting and reading

Previous years:

- Empathize
- Come up with multiple solutions
- Walks with music
- Talk to people, get their opinions
- Pinterist
- Talk to myself
- Bounce similar words: Cardboard to cardstock
- Design heuristics cards
- Do research on existing solutions, try to go beyond
- Put on simmer in back brain, then comes out in the shower.
- Go eat, while relaxed
- Near drowning writing
- Dali: fall asleep with a plate, then use the adrenaline rush from crash to get ideas
- Being receptive while falling asleep
- Think to yourself first, then talk to others
- Youtube videos
- Expose yourself to similar solutions
- Create a roadmap: list specifications and goals
- Look through previous work; springboards
- Walk away, give yourself time
- Think of materials, then the object, and vice versa

Consider your audience, then come up with tone words about what they want
 Come up with user personality profiles, be empathetic
 Break task up into smaller parts
 Go do sports with music, to relax the brain
 Write everything, don't hold back, even if it is not possible/probable. Springboard off others' ideas.
 Questionstorming. Qstorming. Helps you decide what's important, can guide brainstorming, open you to other considerations.
 Sr design: pack of cards with techniques. Heuristic cards
 Ugrad. Write down 100 ideas. First 15 are good, 50 are meh, after 70 ideas really opened up



Content from Thinkertoys by Michael Michalko

- Business/entrepreneur oriented
- Lots of stories, some references
- Assortment of techniques
- Very positive-thought oriented

Ideation, particularly new ideas, comes from shifting your perspective, your point of view



Do you see FLIP or FLOP?

A B C Both

90% 2021

Linear techniques

- Explore idea space systematically

Intuitive techniques

- Your subconscious already has an answer, you just have to ask it nicely

Linear Techniques

False Faces

- 1) State your challenge
- 2) List your assumptions
- 3) Challenge your fundamental assumptions
- 4) Reverse each assumption; write down the opposite of each one
- 5) Record differing viewpoints that might prove useful to you
- 6) Ask yourself how to accomplish each reversal. List as many ideas for each as you can.

Scamper

Scamper

From Alex Osborn, 1940, pioneer of brainstorming techniques. Memonic by Bob Eberle

Substitute something

Combine it with something else

Adapt something to it

Modify or **M**agnify it

Put it to some other use

Eliminate something

Reverse or **R**earrange it

Intuitive

Not Kansas

Guided visualization. Similar to 'go to your happy place'; imagine experiencing all 5 senses: sight, touch, smell, taste, hearing. Entwine receiving mysterious messages, then look at them and write them down.

STORM

You had never seen such a sunset. The sun was like a dying coal, ringed with black long before it neared the horizon. After the sunset, the rim of the earth was blood-red for a few minutes, then the red was streaked with black. When you looked at the eerie sky, it seemed as if the world had turned upside down and the road that ought to be beneath your feet was now above your head. And then the sky turned black.

You are surprised by a flicker of light to the west—so quick that you do not recognize it as lightning. But it flickers again and again and soon is almost constant. Then comes the thunder, with a sound that seems to roll

over you like boulders. The lightning begins to drive into the earth, with streaks as big as poles and terrible sounds.

The rain begins, pelting down in big scattered drops that at first feel good, but the drops grow bigger and soon the rain is falling in sheets, blown this way and that by the fitful wind. In a bright flash of lightning, you see something run in front of you. What is it? Study it and then let it go, but remember what you saw.

The water beats down more heavily, pounding you and running in streams off your hat brim. The rain is now so heavy that you begin to think you might be drowned. A stream of water pours down in front of your nose while another runs down your back. You are so cold and wet that you feel you might never get warm again.

The ground is covered with water and there is nothing to do but splash along. Suddenly, you begin to slide—you have stepped into a hole and you feel water rising up to your hips. You climb out and squish along again.

Soon you get too tired to think and can only hope for morning. But the night goes on and on. Finally, the lightning dies and the hard rain slows to a drizzle. You stop to empty your shoes of water. You drop one. When you stoop down to pick it up, you notice a bottle with a slip of paper in it. You pick up the bottle and put it in your pocket.

A little while later, dawn breaks and the rain stops completely. The sky is cloudless. The first sunlight sparkles on the wet trees and bushes and on the hundreds of scattered puddles. Cold and damp, you bend over a puddle and wash the mud off your clothes. Now that the sun is beginning to warm things up, you find a grassy hill that isn't too wet and start a small fire. Starved, you fry up some eggs and thick slices of bacon. Breaking the fried eggs with your knife, you eat them with slices of bacon as you warm your body by the fire.

Remembering the bottle, you take out the note and read it slowly. What are the images? Open your eyes and write or draw your impressions and images. Write whatever comes to mind.

If the images are cloudy, repeat the exercise daily until you are comfortable with it and the images grow vivid. Begin to imagine that you are going to experience a breakthrough and the images will flow.

... who was trying to find a new business niche experienced

set up a
cook stove
substitute
favorite
protein

- a) I got nothing
- b) Kinda cool, but nothing specific
- c) A couple of ideas
- d) Bingo! Something useful



2021

2019 2020
39% 21%

Guided Visualization - Intuitive technique

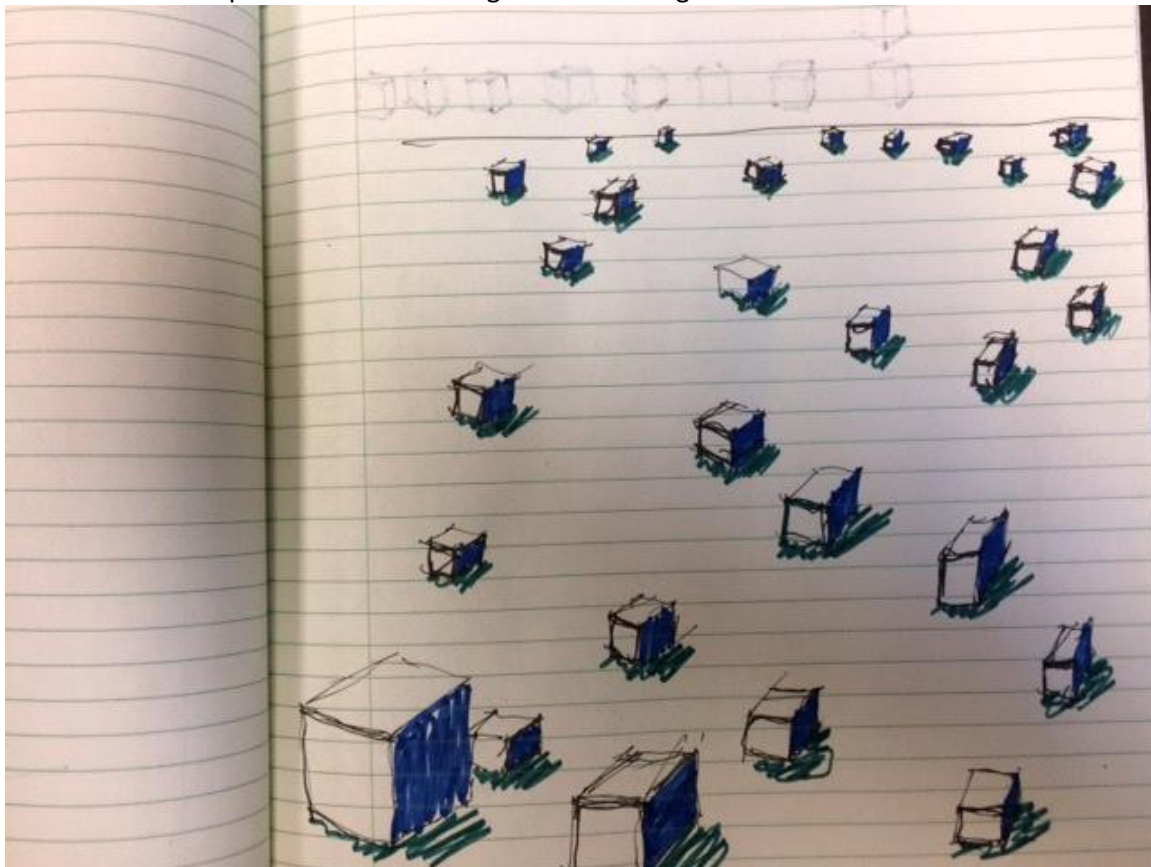
A I got nothing

11 + nothing specific

39% 21%
 37% 6%
 47% 14%
 13% 4%

A I got nothing
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Exercise 6: Draw a plane of boxes. Adding a bit of shading makes it look like art.



Shadow in 2 point perspective

Three levels of rigor:

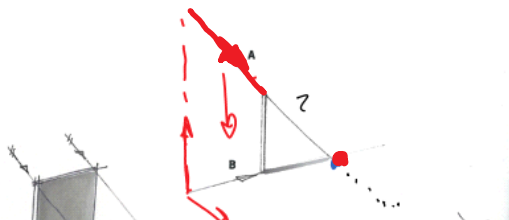
- 1) Assume diffuse light, and shade undersides. Guess at shadow outline, fade edges of shadow.
- 2) Assume sunlight, parallel light. Draw parallel lines from each corner, guess at intersection with ground plane (Sketching: The Basics method). Violates 2 point perspective, however.

SKETCHING THE BASICS

2.2.3 Shading and Cast Shadow

Shading is used to emphasise the volume of an object, and to position it in its surroundings.

Shading refers to the differences in darkness of the object's sides, as related to a light source. Cast shadow is the projected shadow onto a surface



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In general, parallel light (sunlight) creates an effective cast shadow. One point light (lamp light) often does not show an appropriate cast shadow. It can create a shadow that is not related to the object's perspective. It is more difficult to construct and less predictable. Cast shadow from a parallel light source is easier to predict and perceived as realistic.

Choosing a direction of the light source is done by two lines: the actual light direction or 'slope' A, and the projected light direction B. Imagine a parallel light source just over your left shoulder. It will have a relatively steep slope A, and B will point slightly towards the upper right.

All the actual light directions (slopes A) in a drawing can be drawn parallel, and all projected light directions will slightly converge.

