



# Ideation

24. March 2023

Module 3  
ROS – En Av Ti

# Visualization Matters

Comparative Study > *Neuropsychologia*. 2004;42(7):944-56.

doi: 10.1016/j.neuropsychologia.2003.11.018.

## From mental power to muscle power--gaining strength by using the mind

Vinoth K Ranganathan<sup>1</sup>, Vlodek Siemionow, Jing Z Liu, Vinod Sahgal, Guang H Yue

Affiliations + expand

PMID: 14998709 DOI: [10.1016/j.neuropsychologia.2003.11.018](https://doi.org/10.1016/j.neuropsychologia.2003.11.018)

### Abstract

The purposes of this project were to determine mental training-induced strength gains (without performing physical exercises) in the little finger abductor as well as in the elbow flexor muscles, which are frequently used during daily living, and to quantify cortical signals that mediate maximal voluntary contractions (MVCs) of the two muscle groups. Thirty young, healthy volunteers participated in the study. The first group (N = 8) was trained to perform "mental contractions" of little finger abduction (ABD); the second group (N = 8) performed mental contractions of elbow (ELB) flexion; and the third group (N = 8) was not trained but participated in all measurements and served as a control group. Finally, six volunteers performed training of physical maximal finger abductions. Training lasted for 12 weeks (15 min per day, 5 days per week). At the end of training, we found that the ABD group had increased their finger abduction strength by 35% ( $P < 0.005$ ) and the ELB group augmented their elbow flexion strength by 13.5% ( $P < 0.001$ ). The physical training group increased the finger abduction strength by 53% ( $P < 0.01$ ). The control group showed no significant changes in

Researchers at the Cleveland Clinic compared people who exercise to those who only did mental training.

The group of individuals who did actual physical exercise saw a 30% increase in strength.

**The individuals who performed exercises only in their minds (for 12 weeks) showed a 13.5% increase in strength.**

This increase was still seen three months after the mental training.

# Gratitude

“Living gratefully begins with affirming the good and recognizing its sources. It is the understanding that life owes me nothing and all the good I have is a gift, accompanied by an awareness that nothing can be taken for granted.”

Professor Robert Emmons,  
University of California, Davis



Source: Emmons, Robert. The Little Book of Gratitude: Create a Life of Happiness and Wellbeing by Giving Thanks (p. 11). Octopus.



NHH



# The Power of Gratitude

A 2015 article in the popular journal *Scientific American* reported that, out of 24 strengths including such powerhouses as love, hope, kindness, and creativity, the single best predictor of good relationships and emotional wellbeing was gratitude.

# The Power of Gratitude

- Keeping a gratitude diary for two weeks produced sustained reductions in perceived stress (28%) and depression (16%) in health-care practitioners.
- Gratitude is related to 23% lower levels of stress hormones (cortisol). Dietary fat intake is reduced by as much as 25% when people keep a gratitude journal.
- Writing a letter of gratitude reduced feelings of hopelessness in 88% of suicidal inpatients and increased levels of optimism in 94% of them.
- Gratitude is related to a 10% improvement in sleep quality in patients with chronic pain (76% of whom had insomnia) and 19% lower depression levels.

# Gratitude & Creativity?



How can you fix a lit candle on a (soft cork) wall in a way so the candle wax won't drip onto the table below?

## THE CANDLE PROBLEM



# THE CANDLE PROBLEM





# The Power of Candy

“In conclusion, the interpretation that we have suggested for the impact of positive affect (gratitude) on creative problem solving is that good feelings increase the tendency to combine material in new ways and to see relatedness between divergent stimuli.”

“These results indicate that creativity, an important skill that is often thought of as a stable characteristic of persons, can be facilitated by a transient pleasant affective state. Moreover, the affective state sufficient to do this can be induced subtly, by small everyday events. This suggests that creativity can be fostered by appropriate modification of the physical or interpersonal environment.”



# Letter to a Loved One

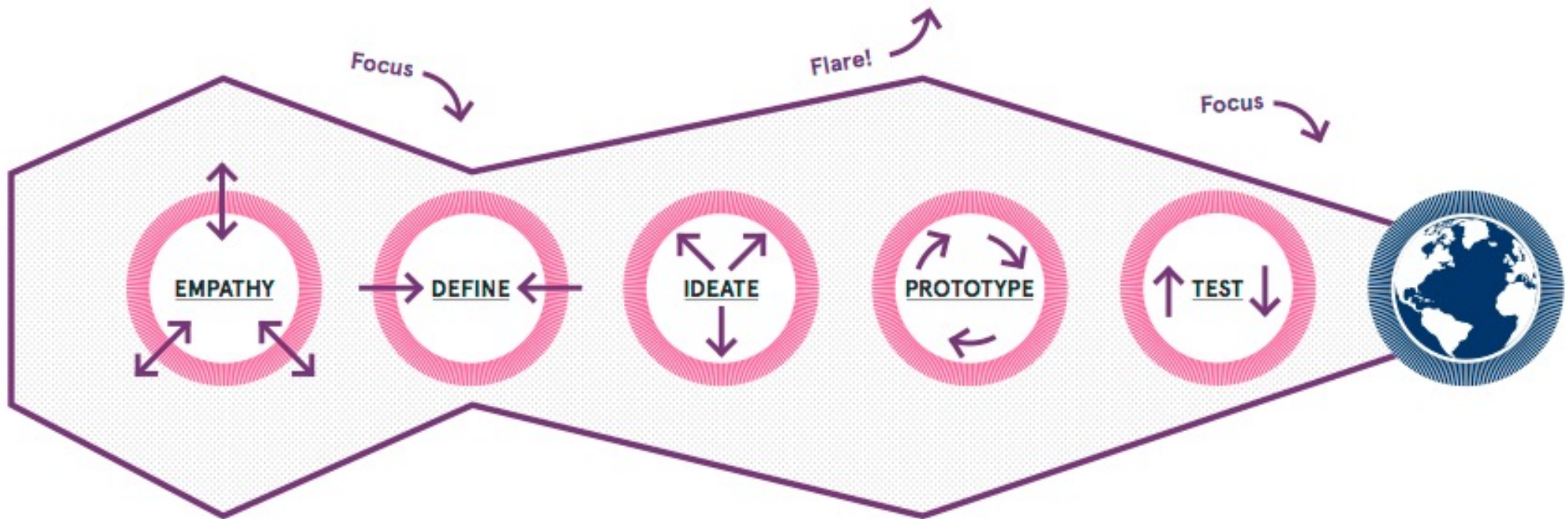
Craft a one-page, A4-size handwritten letter to a person who has had a significant influence in helping you arrive at where you are today, but to whom you have not had the opportunity to fully thank.

This could be a parent or guardian or close family member, teacher, mentor or friend.

Tell them how much you appreciate them, and how much their influence and care has shaped you as a person. Pick two or three major life stories to share with them and be as specific as possible while sharing your gratitude.

Snail mail (or, ideally, hand) them the letter before our next module.

# Ideation



# HIIT:

## High Intensity Ideation Training

1. Functional Fixedness
2. Mind Blocks
3. Cross Pollination
4. Visualization

# Bottle time!



Find as many uses for a coke bottle as possible.

5 minutes.

# “The Gods Must be Crazy”



# Functional Fixedness:

A cognitive bias that limits a person to using an object only in the way it is traditionally used (Karl Duncker, 1945)



Business Education

# How Mindfulness Can Help Engineers Solve Problems

by Beth Rieken, Shauna Shapiro, Shannon Gilmartin, and Sheri D. Sheppard

January 04, 2019

**Summary.** Engineering work demands creativity and innovation in order to solve complex, interdisciplinary problems. But creativity and innovation skills are not emphasized in many traditional engineering courses. So engineers enter the workforce with important analysis skills, but may struggle to “think outside the box” when it comes to creative problem-solving. New research shows that by promoting divergent thinking, mindfulness can help engineers strengthen their ability to generate new ideas, leading to new ways of thinking and better solutions. [close](#)



# Mindfulness @ DT

Two divergent thinking tasks:

- List as many alternative uses for a brick as possible
- List all the factors you would consider in designing a wall for a river-flood scenario

# Mindfulness @ DT

“Baseline mindfulness correlated with the number and the originality of ideas that participants wrote down in the idea generation task and with the number of factors considered in the engineering design task.”



Source: “How Mindfulness Can Help Engineers Solve Problems,” Rieken, Shapiro, Gilmartin & Sheppard, *Harvard Business Review*, January 04, 2019



NHH



# Mindfulness @ DT

Mindfulness → more curiosity and less judgement.

“Having an open and curious attitude is referred to as ‘beginner’s mind’ — the capacity to bring fresh eyes to a problem and engage in new perspectives for how to solve it. By remaining open to experiences, we are more likely to make connections between seemingly unrelated concepts, which is crucial to generating original ideas.”

# Welcome Back!



# Empathy Dance!



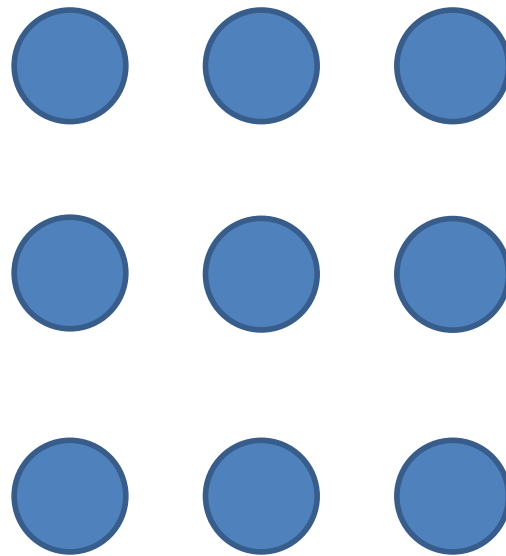
# Expert Tip:

Sometimes to flare,  
you need to focus.

“Think inside the box”

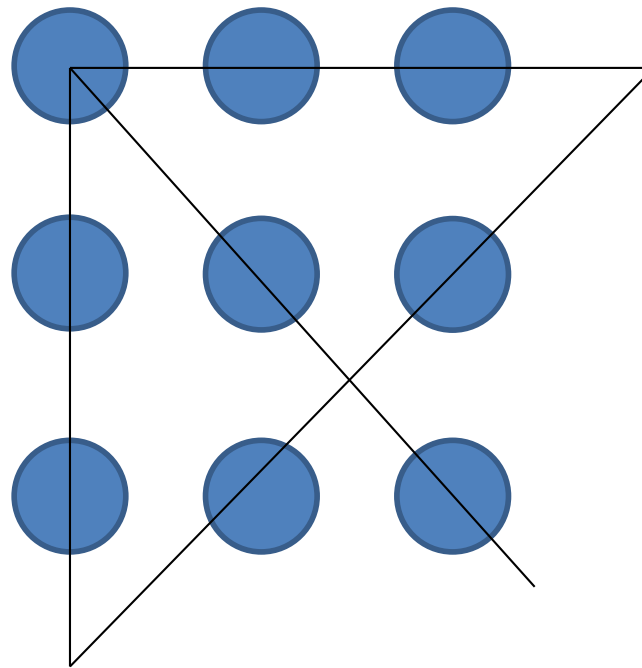
# The Line Game

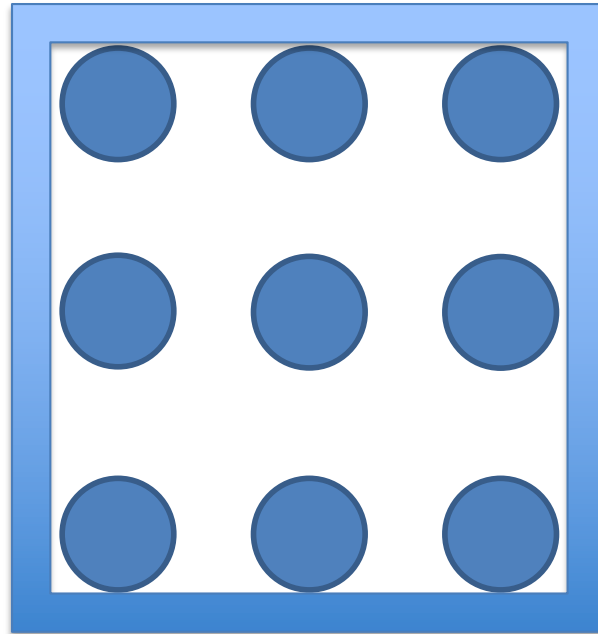


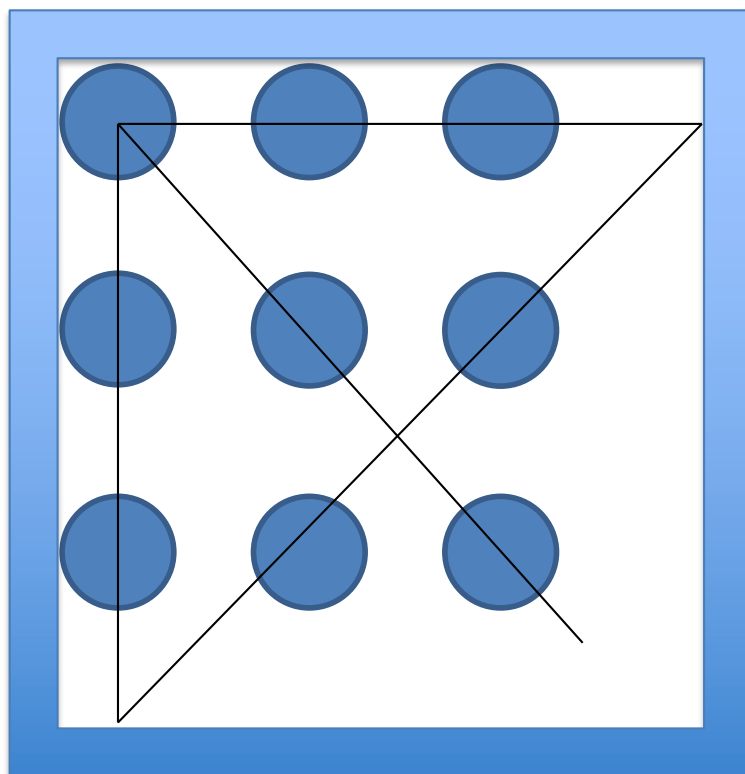




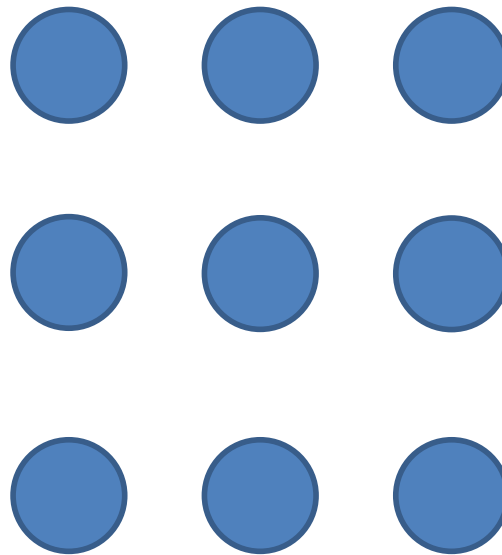
- Draw four straight lines
- Going through all nine dots
- Without lifting your pen

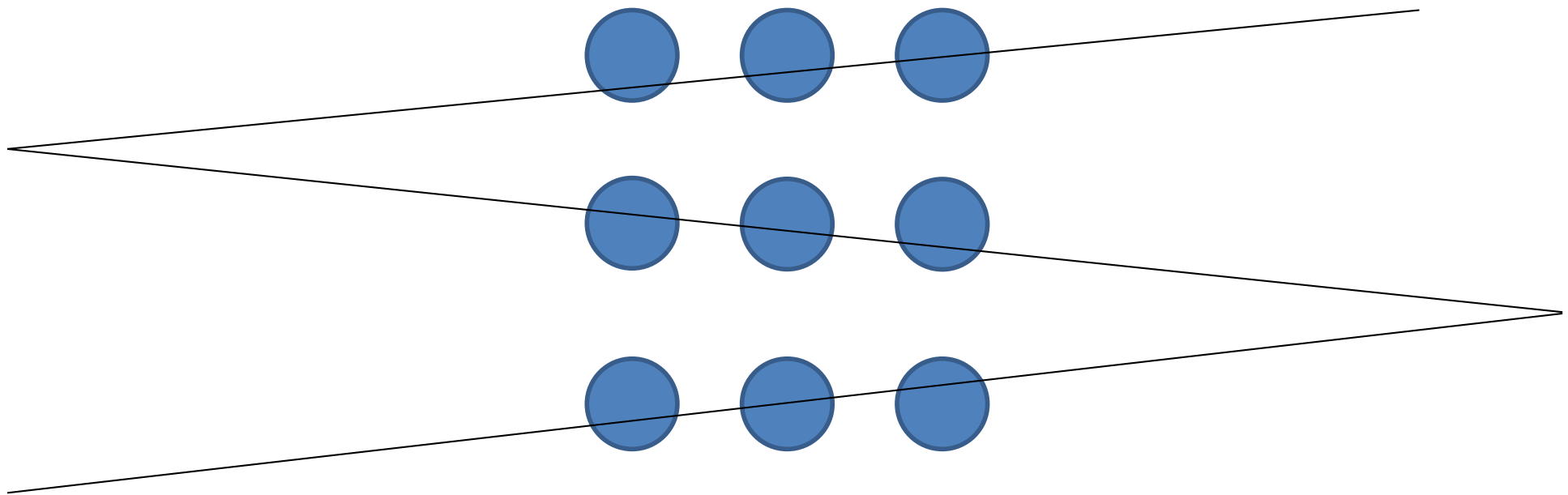




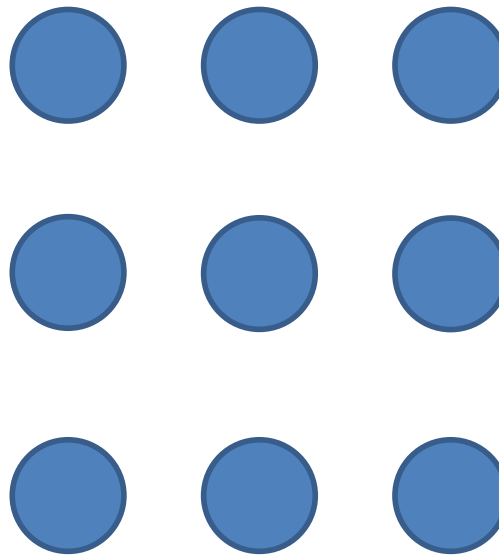


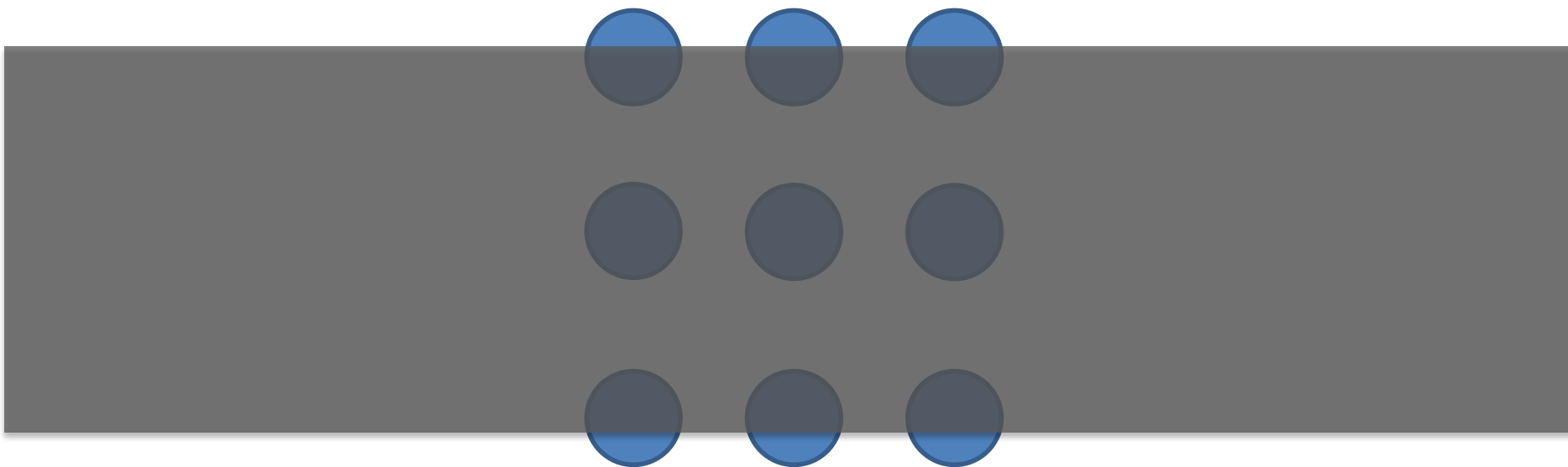
# Now try with 3!





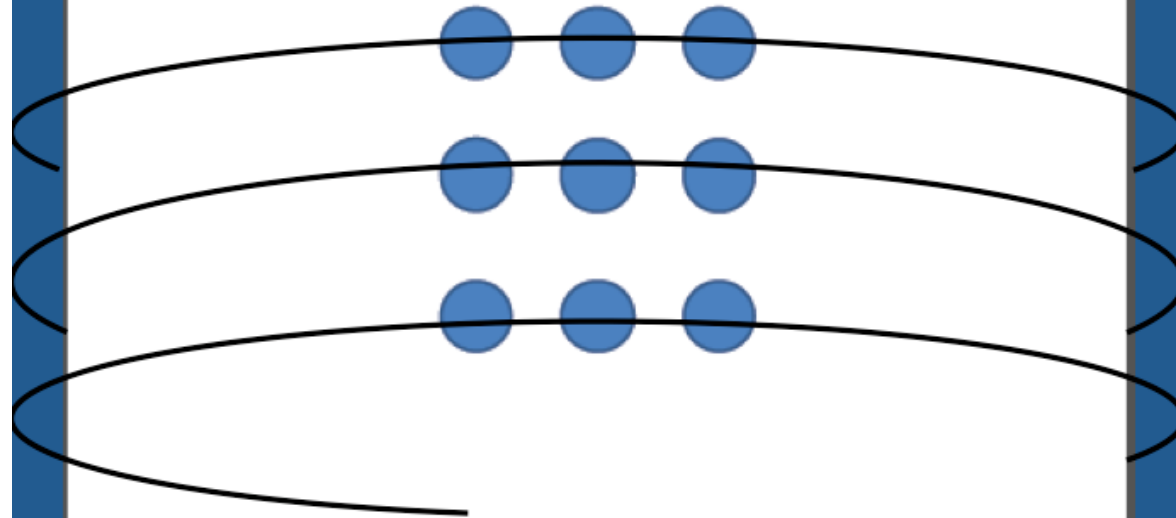
# And with 1!?

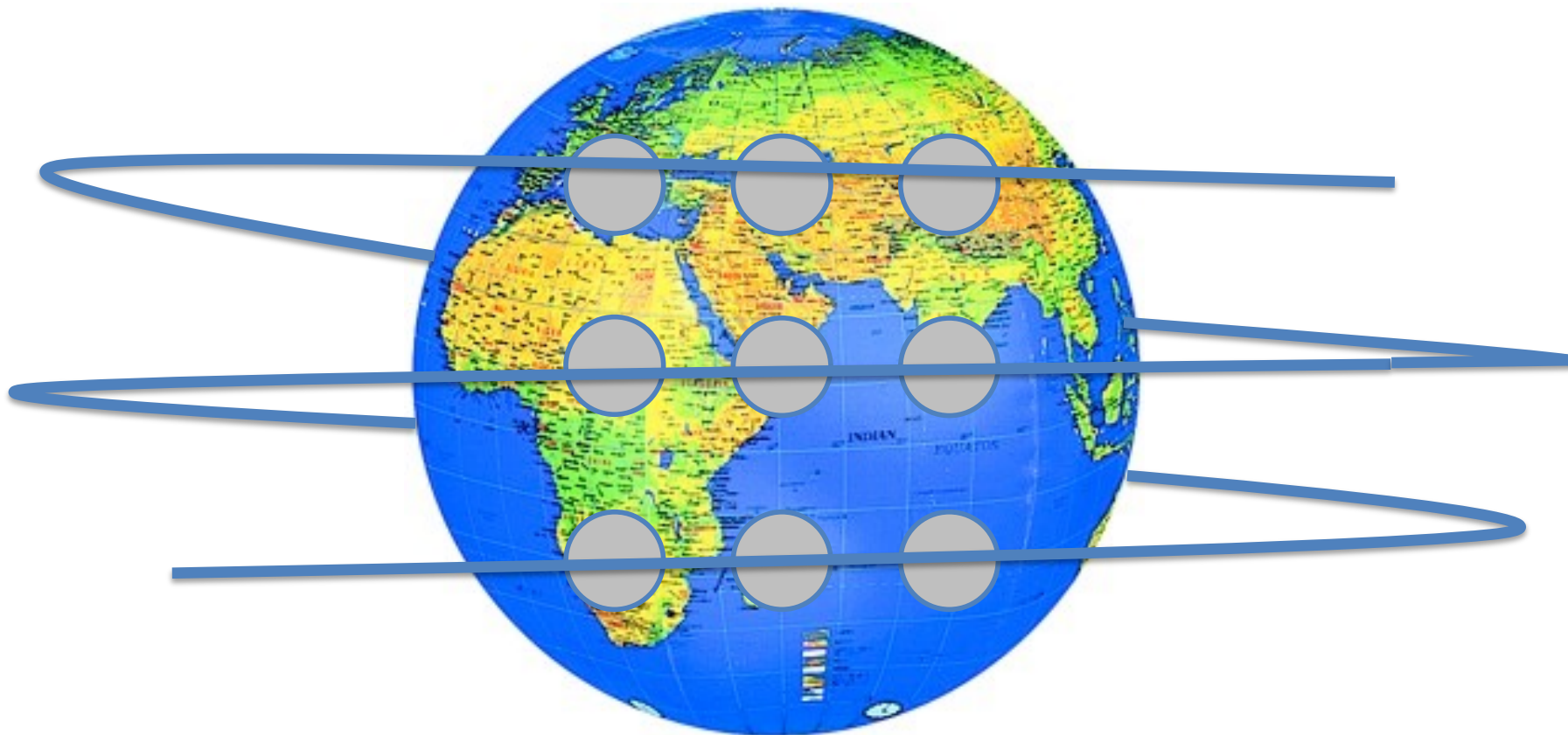






# The Line Game

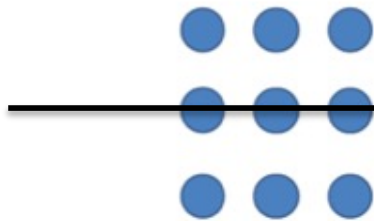




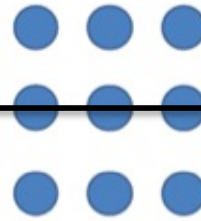
# The Line Game



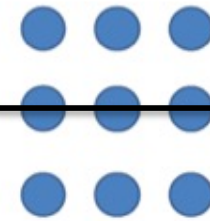
### The Line Game



### The Line Game



### The Line Game





# Where do ideas come from?



# Cross-Pollination





Martin Elliot



Allan Goldman











# Technical error decrease

42%


# Information error decrease

49%



a  
Little  
White Chapel



Joan Collins  were married here Michael Jordan

24 HR DRIVE UP  
WEDDING WALK













STATE OF NEVADA  
MARRIAGE CERTIFICATE  
No. 20080323000201210

Fee: \$10.00  
N/C Fee: \$0.00

04/04/2008 09:21:47

T20080056841

Requestor:  
RECORDER CLARK COUNTY

Debbie Conway KAH  
Clark County Recorder Pgs: 1

State of Nevada }  
County of Clark } SS:

This is to certify that the undersigned, REV. ROBERT L. STONE,  
(print name and title of official performing marriage)  
did on the 24<sup>th</sup> day of the month of MARCH of the year 2008,  
at Little White Wedding Chapel, Las Vegas, Nevada,  
(address or church) (City)  
join in lawful wedlock FEDERICO LOZANO FERNANDEZ,  
(Groom)  
of STANFORD, State/Country of CALIFORNIA,  
Date of birth 04/01/1979  
and HLIN IRENE SAGEN GRUNG,  
(Bride)  
of BERGEN, State/Country of NORWAY,  
Date of birth 04/28/1983  
with their mutual consent, in the presence of

Rose Sharpe  
(Witness)

Rev Robert Stone  
Signature of Official Performing Marriage (Black Ink Only)

REV. ROBERT L. STONE  
Print Name and Title of Official

110 N Boulder Hwy 120-71  
Address of Official Performing Marriage

Henderson NV 89015  
City, State and Zip Code



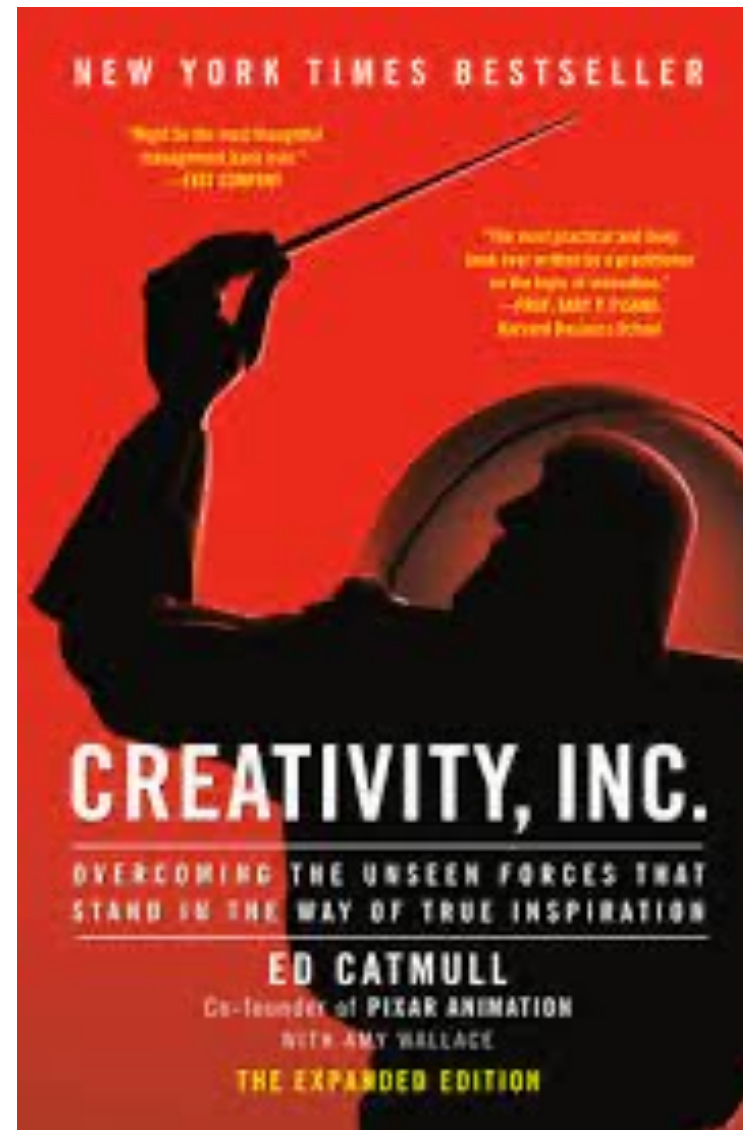
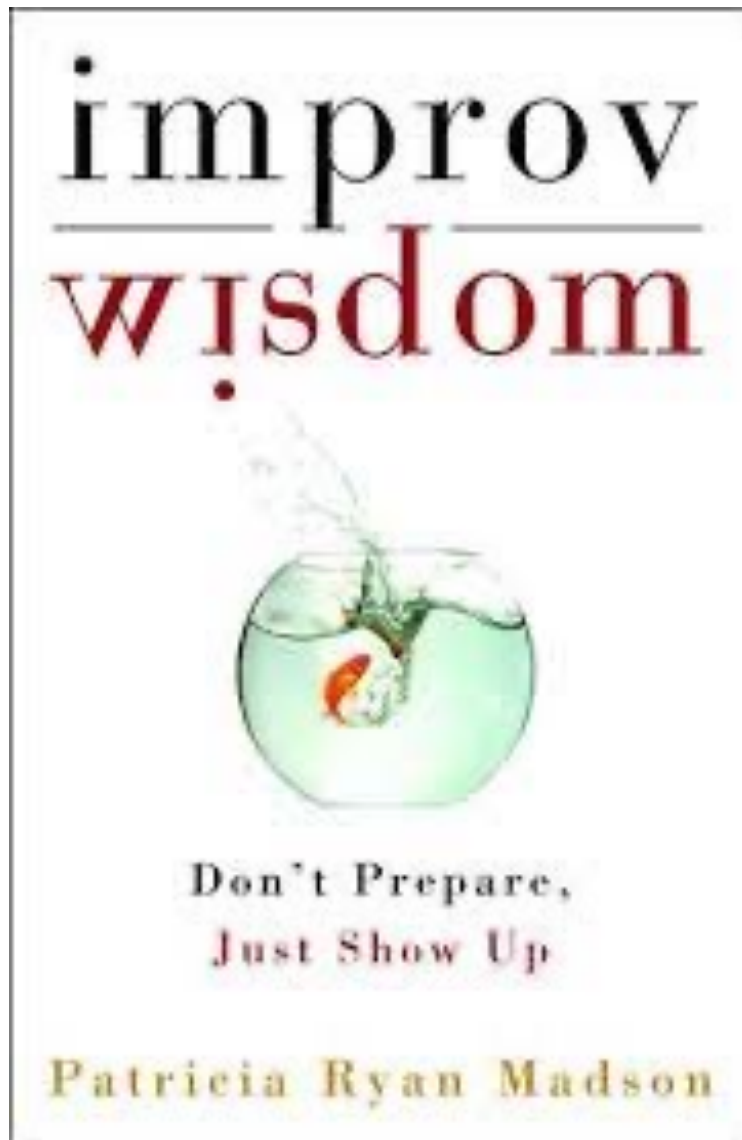
Shirley B. Farraguirre  
SHIRLEY B. FARRAGUIRRE, COUNTY CLERK











# Yes And...



EN  
AV  
TI

THESE  
WAYS

Ros  
Rådgivning om  
spiseforstyrrelser

abc family

NTNU

NHH



PRACADEMY

# Pass On The Gift Game



# Yes And...



# Brainwriting





# Make Your POV Visual



# Let's Intermingle!



# Brainwriting



# Creation Flourishes Through

Sketching

# Whatchamadrawits

Draw a  
playground for  
adults

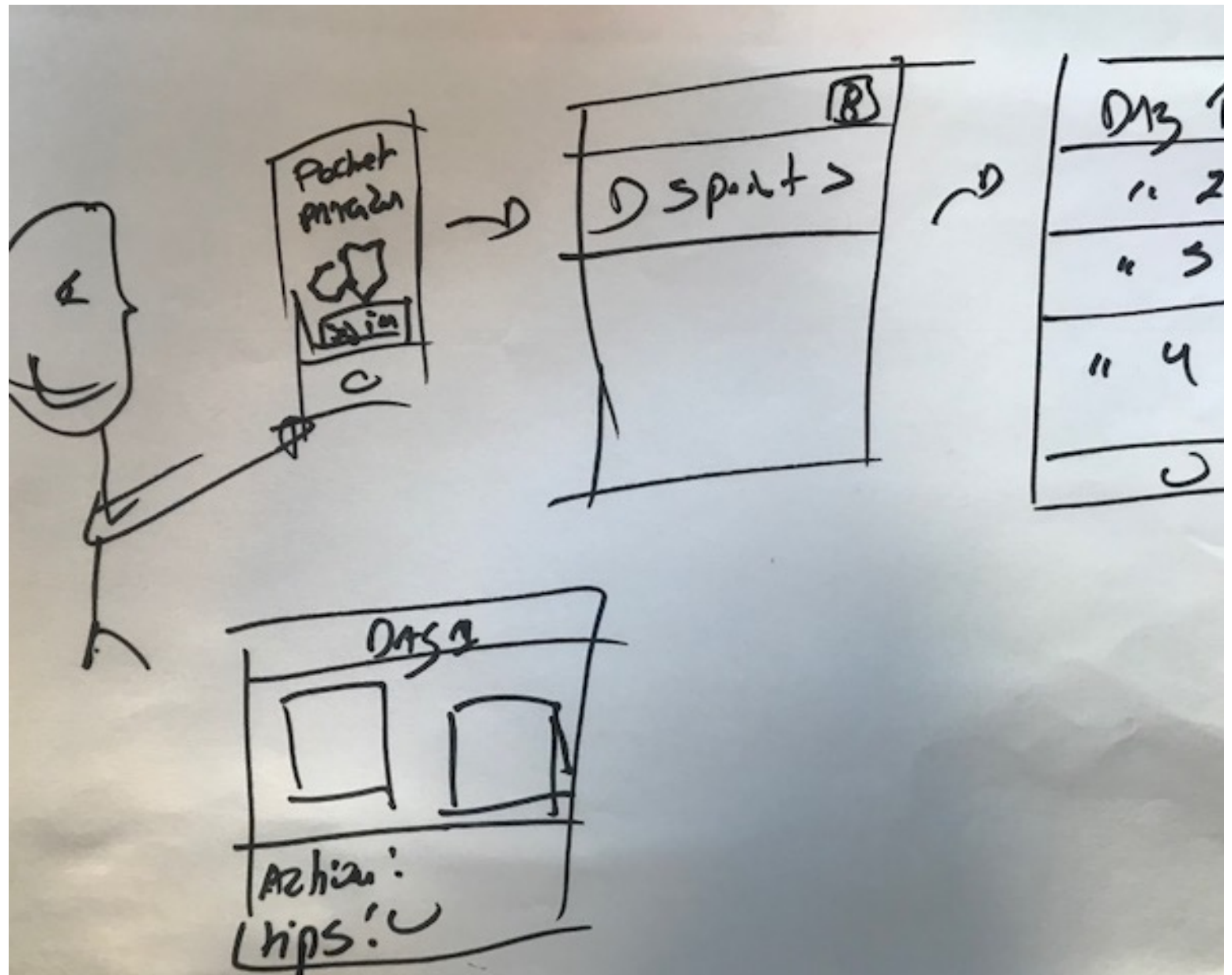
Draw a house  
for rainbows  
and unicorns

# Three Part Sketching

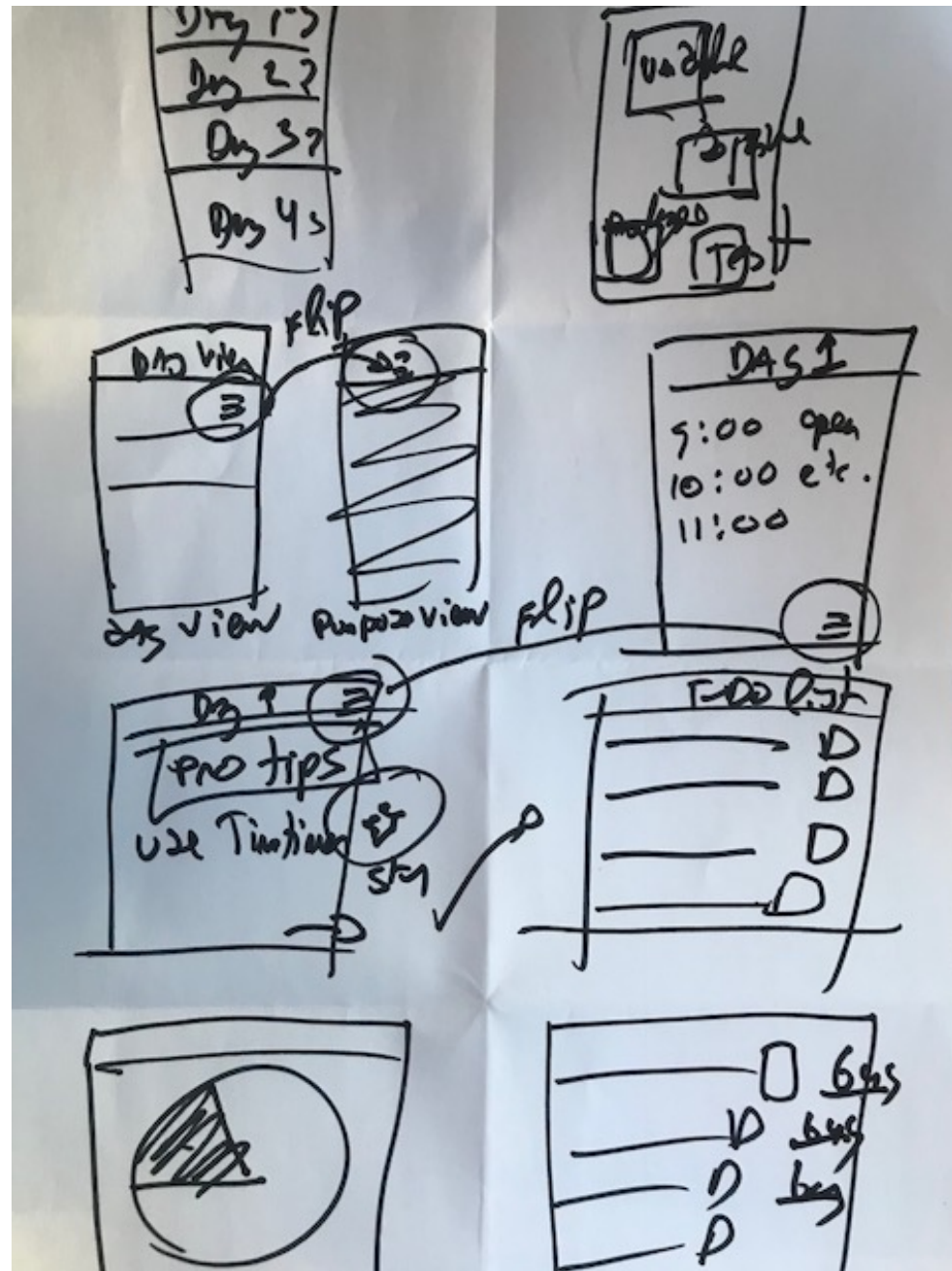
(Individually & Silently)

1. Idea Doodling: 7 min.
2. Crazy 8s: 8 min.
3. Solution Sketch: 10 min.

# Idea Doodle



# Crazy 8s



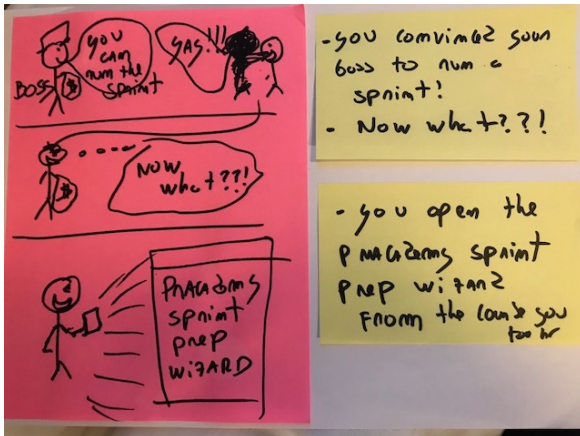


# Three Part Sketching

(Individually & Silently)

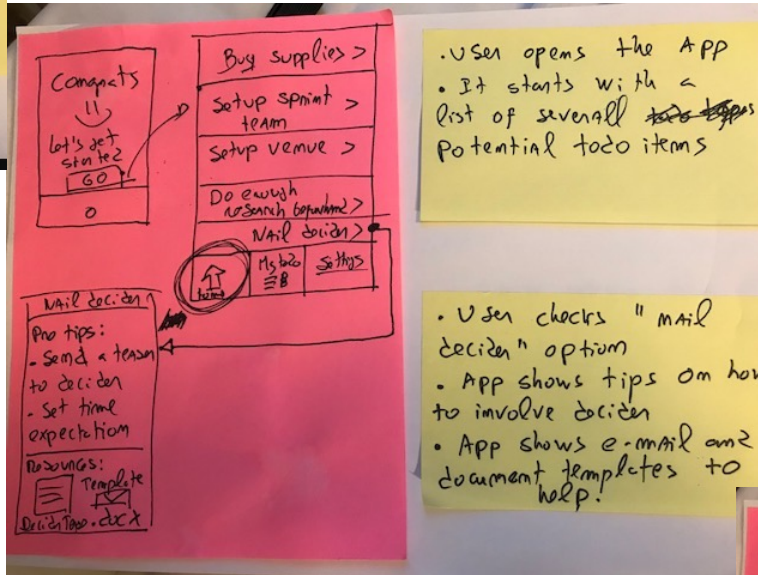
1. Idea Doodling: 7 min.
2. Crazy 8s: 8 min.
3. Solution Sketch: 10 min.

# Solution Sketch



- you convince your boss to run a sprint!  
- Now what??!

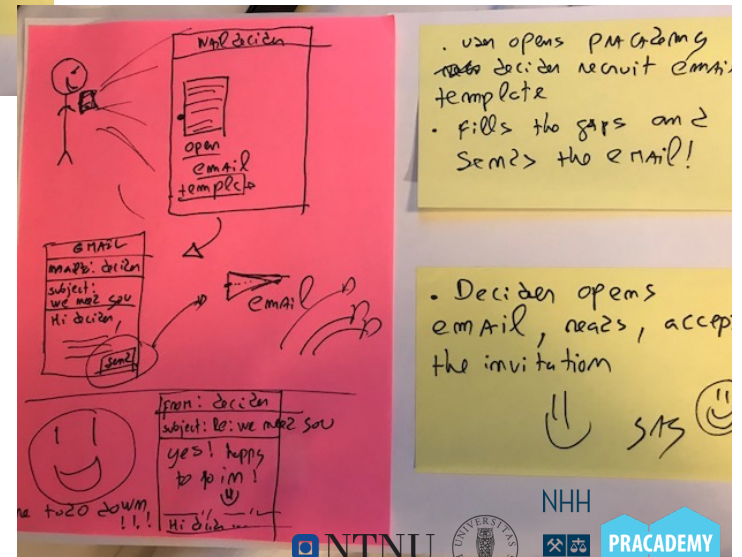
- you open the PRACADOM sprint prep wizard from the course you took for



. User opens the App  
. It starts with a list of several ~~tasks~~ potential todo items

. User checks "mail decision" option  
. App shows tips on how to involve decision  
. App shows e-mail and document templates to help.

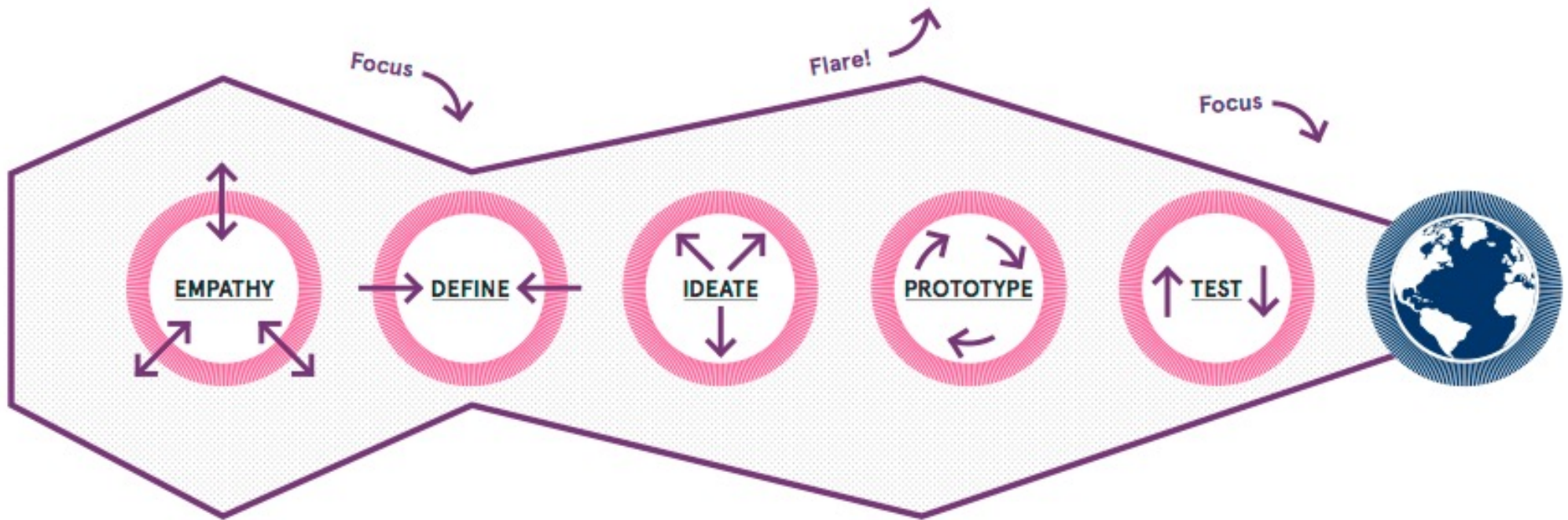
**Rules:** ugly is OK, words matter, self-explanatory, don't share, alone together, nickname it, focus on one idea, hang up backwards



. user opens PRACADOM decision recruit email template  
. fills the gaps and sends the email!

. Decision opens email, reads, accepts the invitation  
↓ SATS 😊

# And Back to Our Favorite Slide!



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