

TRANSFERABLE SKILLS I

DesignThinking Module

2022.2023

lesson 6

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6.1 CREATIVITY 'MEANING'

Fluency

Flexibility

Originality

Elaboration

6.2 EXPERIMENTATION PHASE

Analogies

Semantic
confrontation

6.3 ELABORATION PHASE

From sketch to
prototype

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CHALLENGE

**what different
things can you do
with a pen?**

**how many
different ideas can
you write down
within 1 minute?...**



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what is most
important?
quantity or
quality ?



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fluency

the ability to express, over a given period of time, more ideas about a given circumstance.



Reis, M., Clemente, V. (2019) A visual tale about creativity. in Tschimmel, K. (Ed.) The Creativity Virus – a book about and for Creative Thinking. Porto, Portugal: Mindshake

CHALLENGE

**how many MORE
different ideas can
you write down
within ANOTHER
minute?... (while
listening some
words)...**



WERE RANDOM WORDS USEFUL? WHY?

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flexibility

the ability to
ordering ideas in
different classes
(categories,
spheres of
application, ...)



Reis, M., Clemente, V. (2019) A visual tale about creativity. in Tschimmel, K. (Ed.) The Creativity Virus – a book about and for Creative Thinking. Porto, Portugal: Mindshake

DIVERGENT THINKING ≠ LATERAL THINKING KATJA TSCHIMMEL & VIOLETA CLEMENTE

DO NOT ARE CENTRED ON PLAYFULNESS.

DIVERGENT THINKING

Author Joy Paul Guilford, 1950s.

Thinking in numerous possibilities and multiple ideas.

Explore a problem in different directions.

Enlarge perspective, look for multiple perspectives.

Free-flow focus.

Is characterised by fluid, flexible and original thinking.

Is impulsive, emotional and expressive.

Constructive.

Opposite is convergent thinking (logical and inferential thinking based on learned rules and regularities).

HOW TO/RULES/ACTIONS

Defer judgment.

Quantity before quality.

Build on others' ideas "yes, and..."

Add, increase, grow, combine, ...

LATERAL THINKING

Author Edward de Bono, 1960s

Thinking in different perspectives and thought patterns.

Reframe the problem.

Change perspective, take an opposite view.

Shift focus.

Is characterised by processing knowledge far away from the problem domain.

Is provocative and unorthodox.

Disruptive.

Opposite is vertical thinking (logical and selective thinking that only moves in a given direction).

HOW TO/RULES/ACTIONS

Expose to random stimuli.

Create analogies.

Reverse viewpoint "what if?..."

Turn around, change angle, exaggerate, ...

TWO DIFFERENT AND COMPLEMENTARY THEORIES OF CREATIVE THINKING

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who was
able to
produce
an
**original
idea?**



how is
originality
evaluated?



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originality

the ability to an idea that is unique, unusual or strongly different from existing thing within a given context.



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CHALLENGE

**select one of your
ideas to
communicate to
the class through a
1 minute sketch**



why is
elaboration
relevant?



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elaboration

the ability to to incorporate details, aiming ideas' development, improvement or 'beautification'.



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DESIGN THINKING MODELS

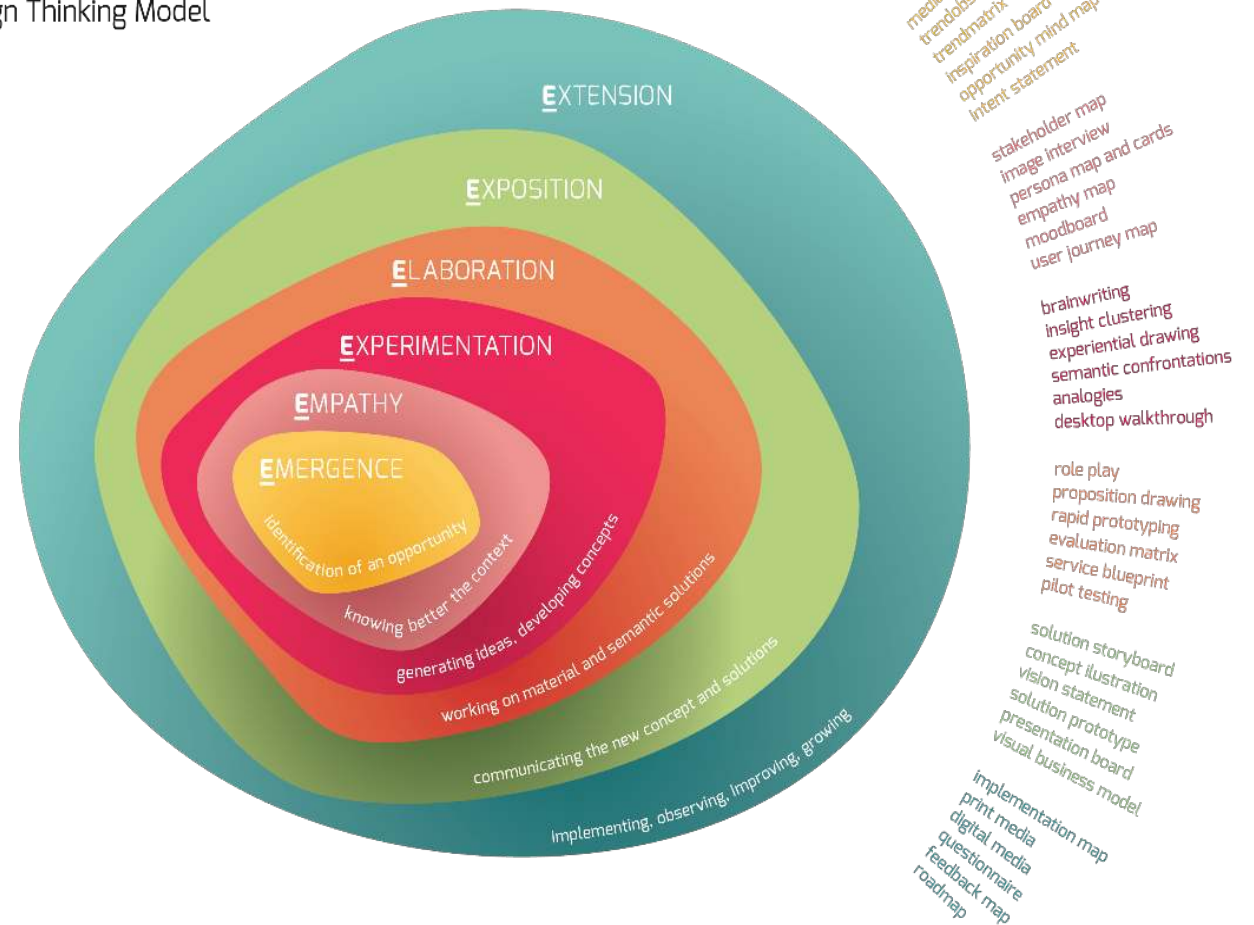
E6² Model

**MIND
SHAKE**

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EVOLUTION 6²

Mindshake Design Thinking Model



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DESIGN THINKING MODELS

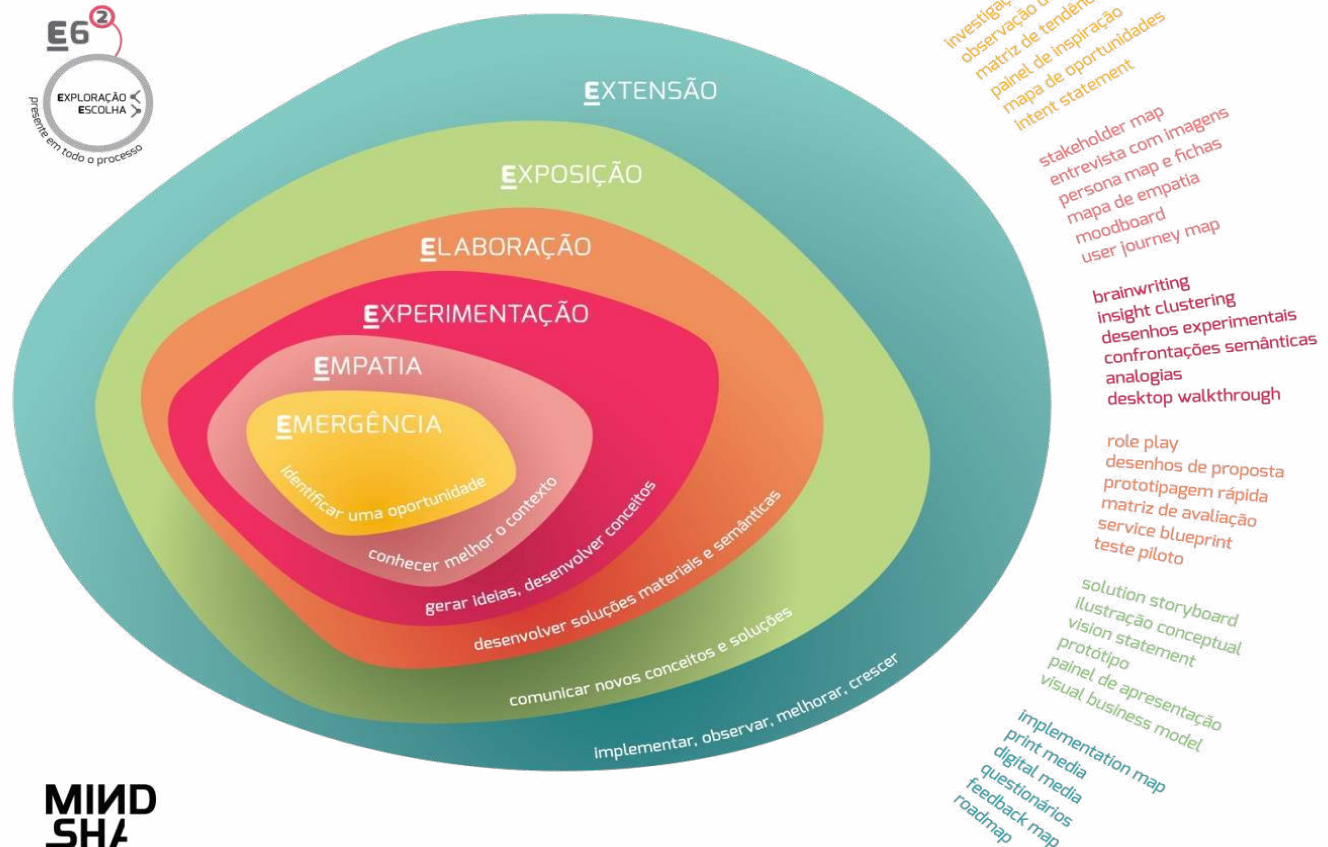
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DESIGN THINKING MODELS

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EMERGENCE

identification of an opportunity



EMPATHY

knowing better the context



EXPERIMENTATION

generating ideas, developing concepts



ELABORATION

working on material and semantic solutions



EXPOSITION

communicating the new concept and solutions



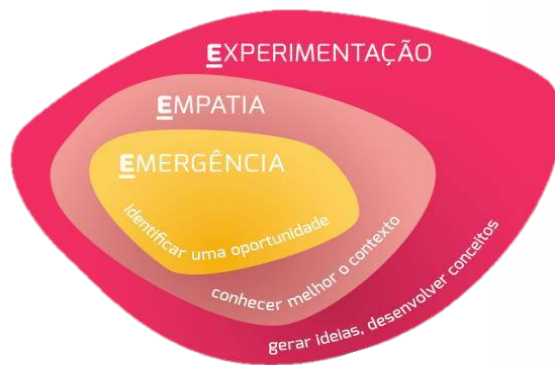
EXTENSION

implementing, observing, improving, growing

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E6² Model

Experimentation phase



how to generate innovative and original solutions?

how to promote creative thinking?

what kind of tools can stimulate lateral thinking?

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E6² Model

Experimentation phase



Analogies

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ANALOGIES



*generating ideas by
comparison*

think against the obvious

inspire ideation

transfer knowledge from
one to another domain

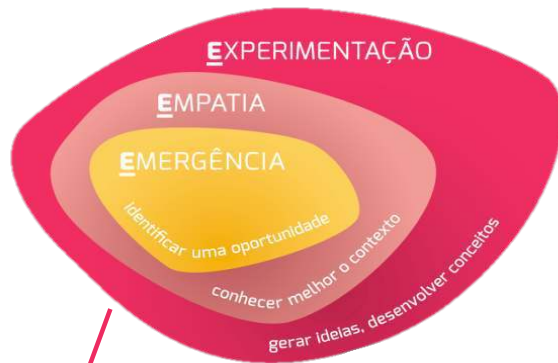
stimulate originality

EXPERIMENTATION

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E6² Model

Experimentation phase



Analogies

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① PERSONAL
ANALOGY



② DIRECT
ANALOGY



④ FANTASY
ANALOGY



③ SYMBOLIC
ANALOGY

CHALLENGE

sketch a chair based on a opposite analogy

...“o que seria o contrário de uma cadeira?”

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MetamoFLOOR



Example taken/adapted from the works carried out until 15/November 2021

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E6² Model

Experimentation phase

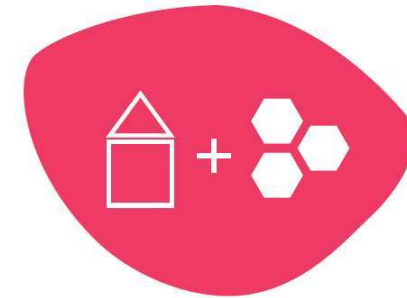


Semantic
confrontations

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SEMANTIC CONFRON- TATION



*generating ideas through
unusual combinations and
forced relationships*

give an impulse for ideation
and imagination

avoid stereotypical thinking

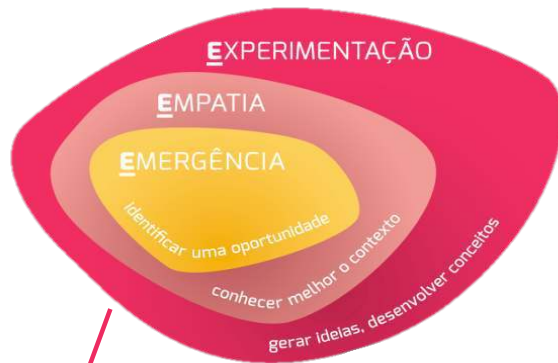
think against the obvious

EXPERIMENTATION

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E6² Model

Experimentation phase



Semantic
Confrontations

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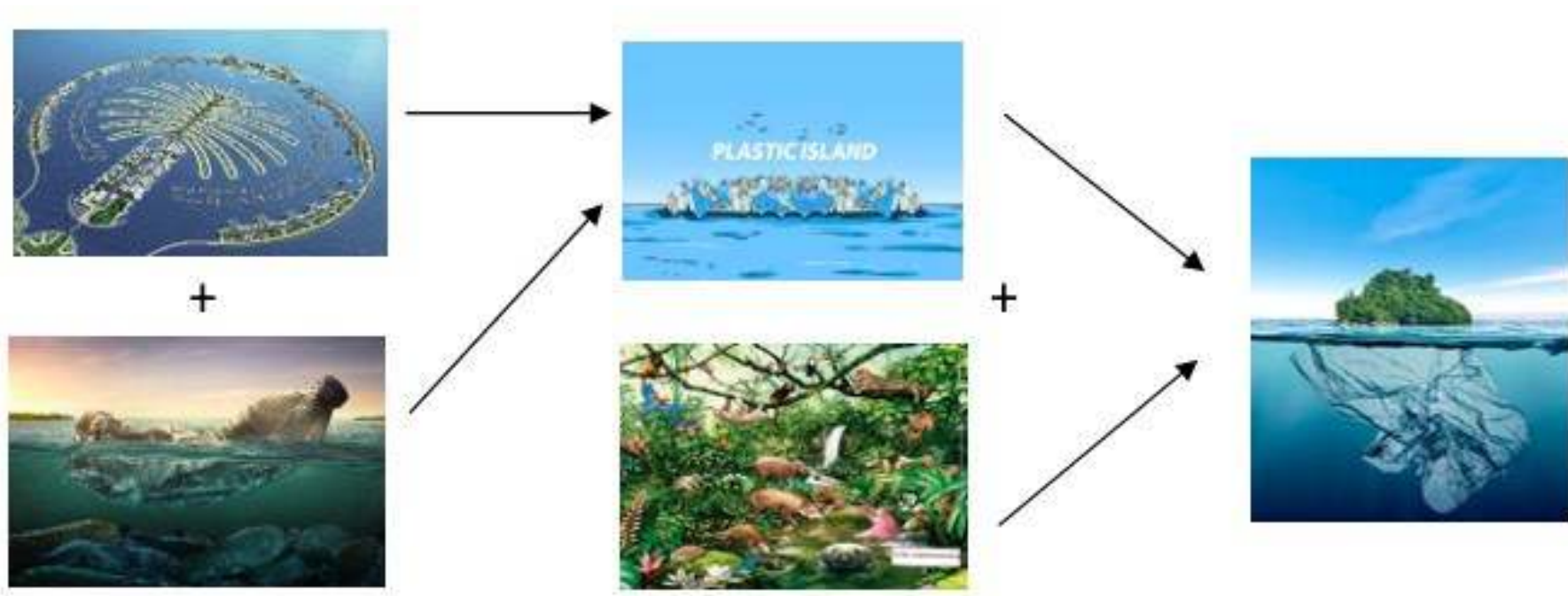
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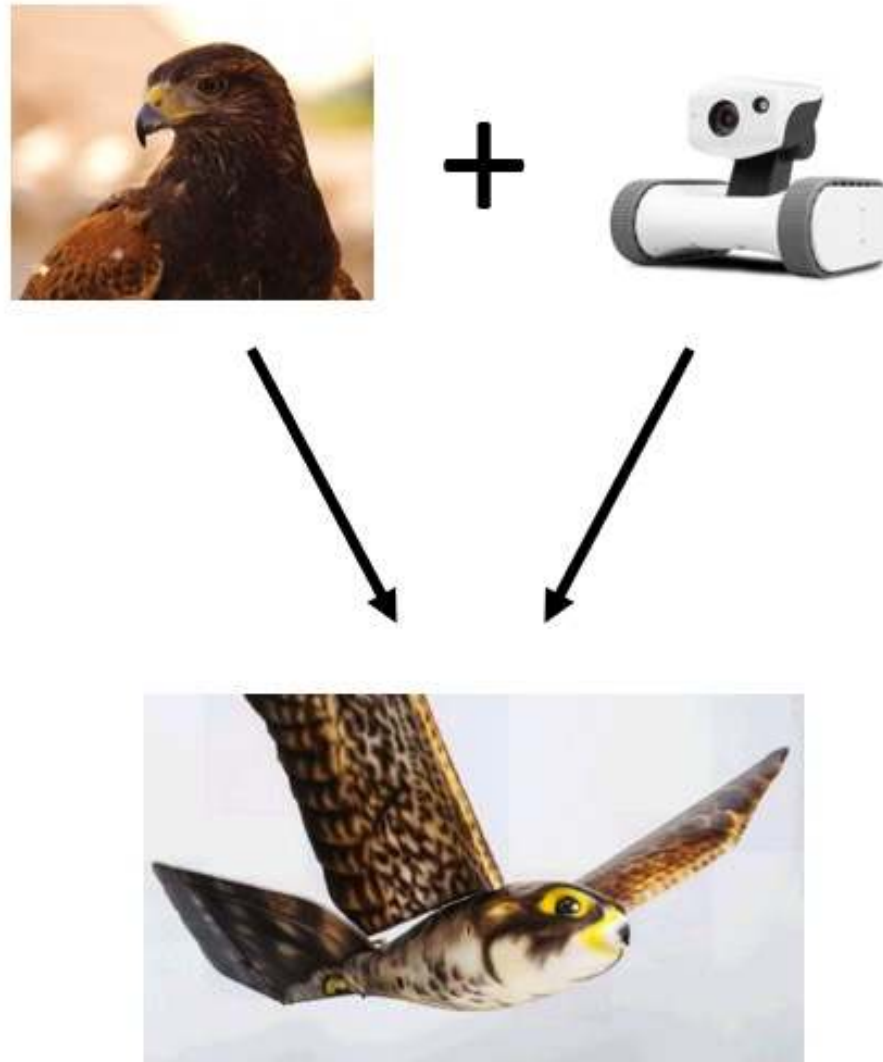
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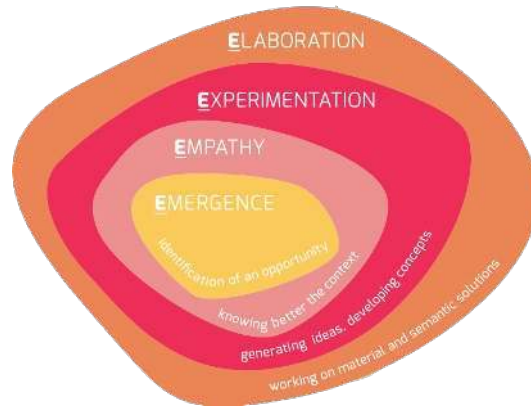


Example taken/adapted from the works carried out until 15/November 2021

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E6² Model

Elaboration phase



How to work on an idea?

How make it more tangible?

How to test How it works?

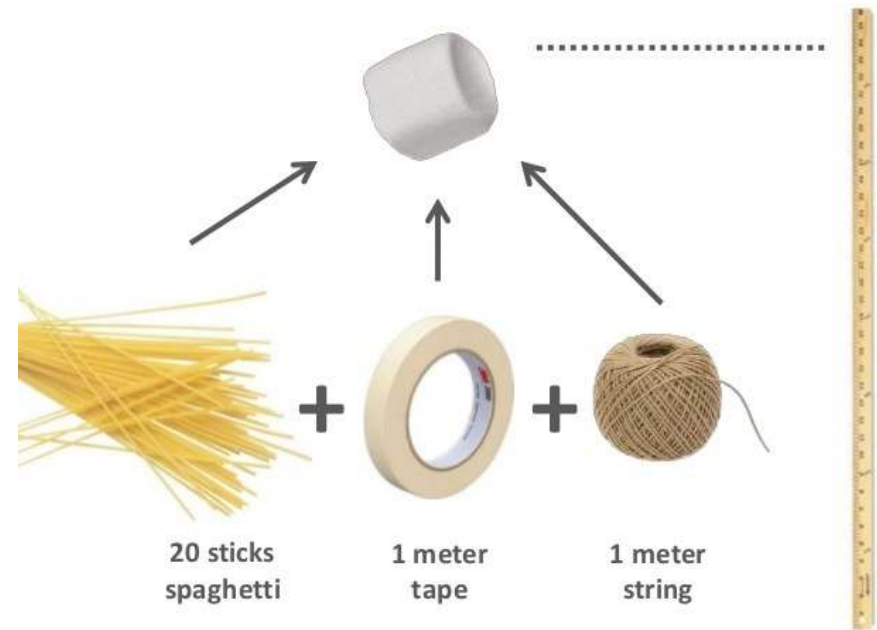
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sketching solutions...

DRAW the tallest tower possible that **will support a marshmallow**, in 18 minutes with:

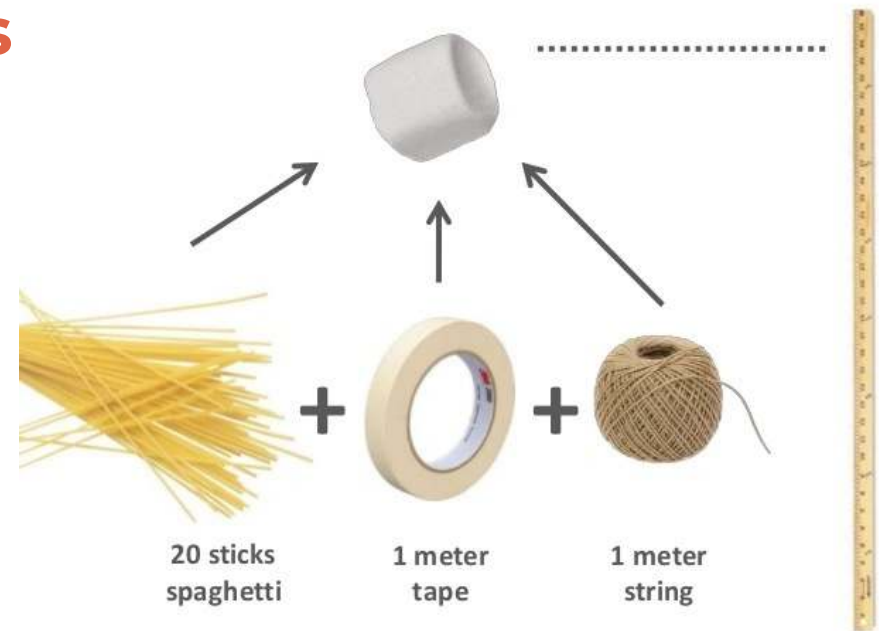
- _20 sticks of dry spaghetti
- _1m string
- _1m tape
- _one marshmallow



...versus prototyping solutions

BUILD the tallest tower possible that **will support a marshmallow**, in 18 minutes with:

- _20 sticks of dry spaghetti
- _1m string
- _1m tape
- _one marshmallow



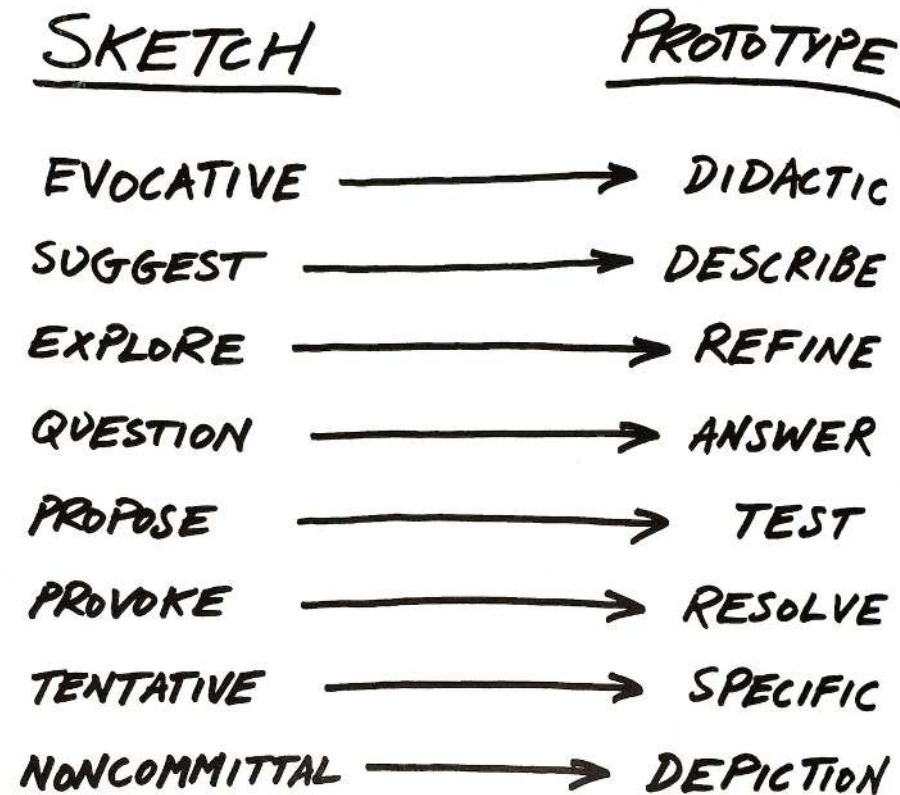
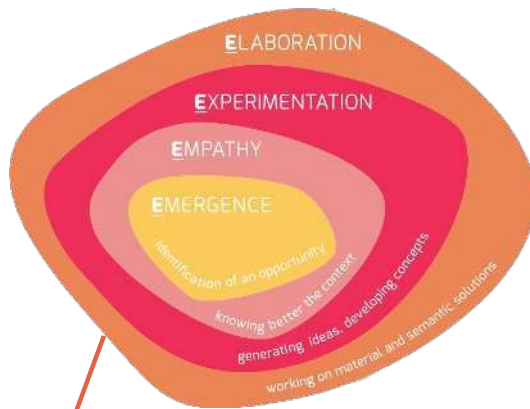


Figure 52: The Sketch to Prototype Continuum
The difference between the two is as much a contrast of purpose, or intent, as it is a contrast in form. The arrows emphasize that this is a continuum, not an either/or proposition.

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E6² Model

Elaboration phase



Rapid Prototyping

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RAPID PROTO- TYPING



*materialising final ideas
with low fidelity*

make abstract ideas concrete

help to refine functional
interactions

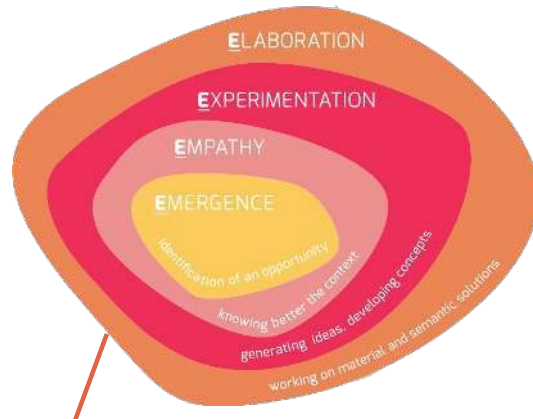
identify problems with the
design

gain early feedback from
the user

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E6² Model

Elaboration phase



Rapid Prototyping

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**don't fall in
love with your
first ideas!**

It is vital to think of possibilities at all scales, to sketch or write them down to share in the process, but not to fall in love with them as “The Solution”

Blythe et al, 2016



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WORK FOR NEXT WEEK



Experiment/play with **ANALOGIES** and/or **SEMANTIC CONFRONTATIONS** and explore what kind of ideas/concepts you are able to come up to or how they change your previous ideas

Don't fall in LOVE with the 1st solution



PROTOTYPE and refine your ideas/concepts