Transferable Skills 1 – *Design Thinking* Module

Lesson 4

Violeta Clemente
Professora Adjunta

Escola Superior de Design,
Gestão e Tecnologias da
Produção de Aveiro - Norte da
Universidade de Aveiro

catarina.clemente@ua.pt

universidade de aveiro
theoria poiesis praxis

Lesson 4
Contents

4.1

Elaboration phase

Sketch versus prototype *challenge*

4.2

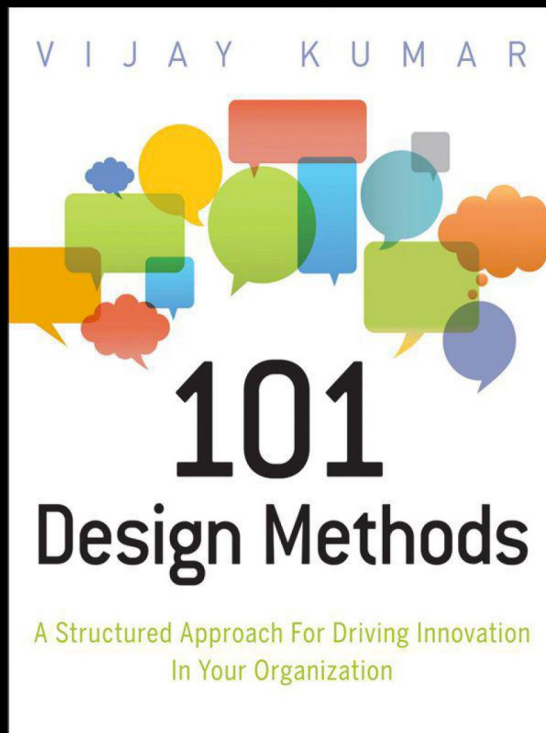## Exposition phase

Recapitulating some ideas…

4.3

Design Thinking Expectations

Re-question(ning)s…

Evaluation

- Essay describing Utopian Vision Work process and results [30%]
  - Maximum 1500 words
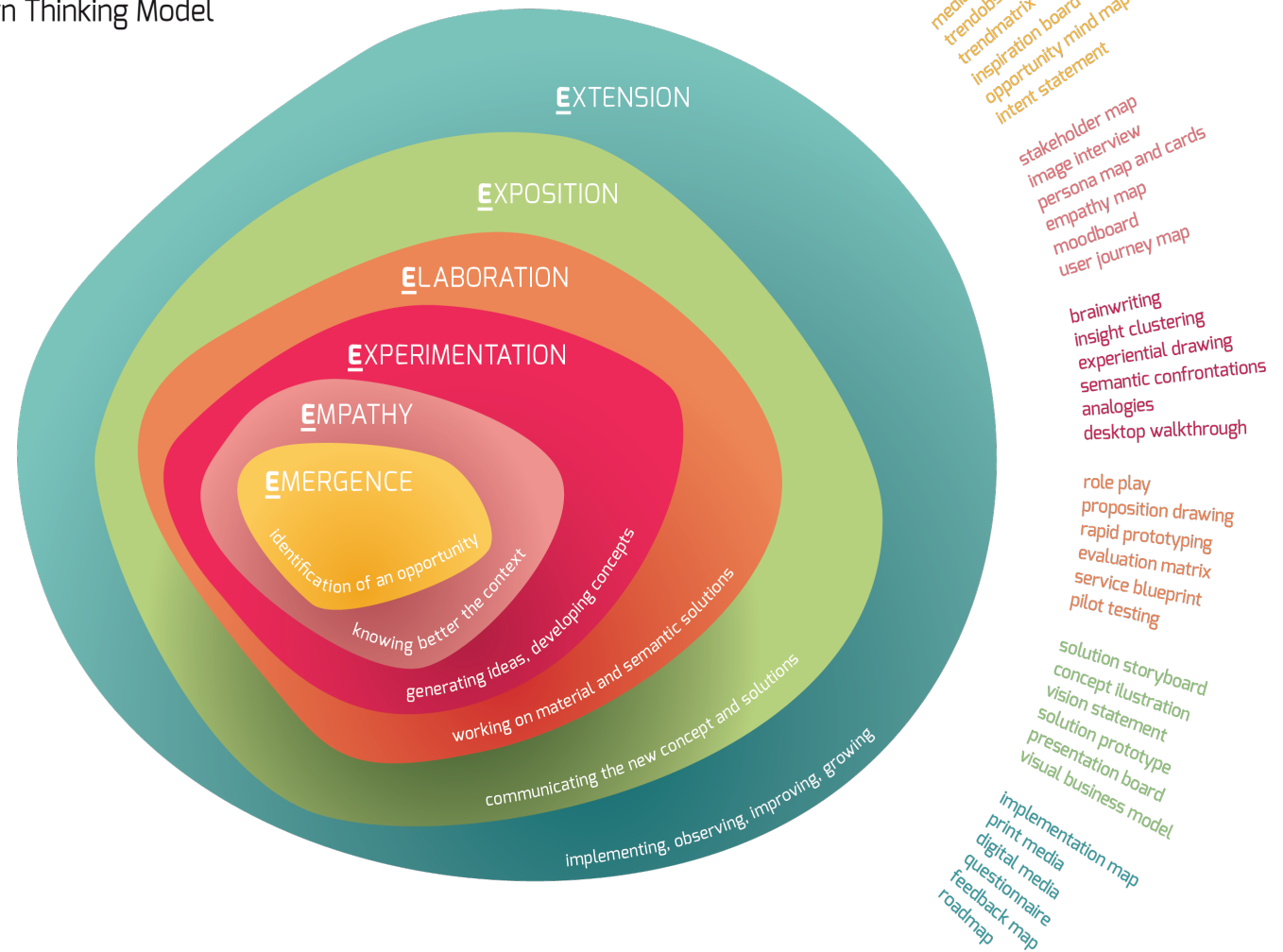 - Interconnection between work description and classes content is valued

**Design
Thinking
Bibliography**

VIJAY KUMAR

101
Design Methods

A Structured Approach For Driving Innovation
In Your Organization

Design
Thinking

INOVAÇÃO EM NEGÓCIOS

Maurício Vianna
Ysmar Vianna
Isabel K. Adler
Brenda Lucena
Beatriz Russo

MJV
PRESS

How to create products and
services customers want.
Get started with...

Value
Proposition
Design

strategyzer.com/vpd

Written by
Alex Osterwalder
Yves Pigneur
Greg Bernarda
Alan Smith

Designed by
Trish Papadakos

WILEY

Strategyzer
Series

Sequel to
Business Model Generation
International Bestseller
30+ Languages

**4.1
Design
Thinking
Models**

EVOLUTION 6²

Mindshake Design Thinking Model

E6²

EXPLORATION
EVALUATION

present throughout

EXTENSION

EXPOSITION

ELABORATION

EXPERIMENTATION

EMPATHY

EMERGENCE

identification of an opportunity

knowing better the context

generating ideas, developing concepts

working on material and semantic solutions

communicating the new concept and solutions

implementing, observing, improving, growing

media research
trendobservation
trendmatrix
inspiration board
opportunity mind map
intent statement

stakeholder map
image interview
persona map and cards
empathy map
moodboard
user journey map

brainwriting
insight clustering
experiential drawing
semantic confrontations
analogies
desktop walkthrough

role play
proposition drawing
rapid prototyping
evaluation matrix
service blueprint
pilot testing

solution storyboard
concept ilustration
vision statement
solution prototype
presentation board
visual business model

implementation map
print media
digital media
questionnaire
feedback map
roadmap

MIND
SHA
KE

FRAME SOLUTIONS
mindsets

The Frame Solutions mindset is about building on the concepts created in the Explore Concepts mode, connecting them with each other to make systems-level solutions that meet desired design criteria or principles. In this mode, the mindset is also about integrating concepts into synergic solutions, compared to Explore Concepts in which the mindset is about creating new concepts independent of each other. The focus is also on making judgments about which concepts and combinations of concepts bring most value to the insights and principles generated in the previous modes.

Sketching solutions…

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

- 20 sticks of dry spaghetti
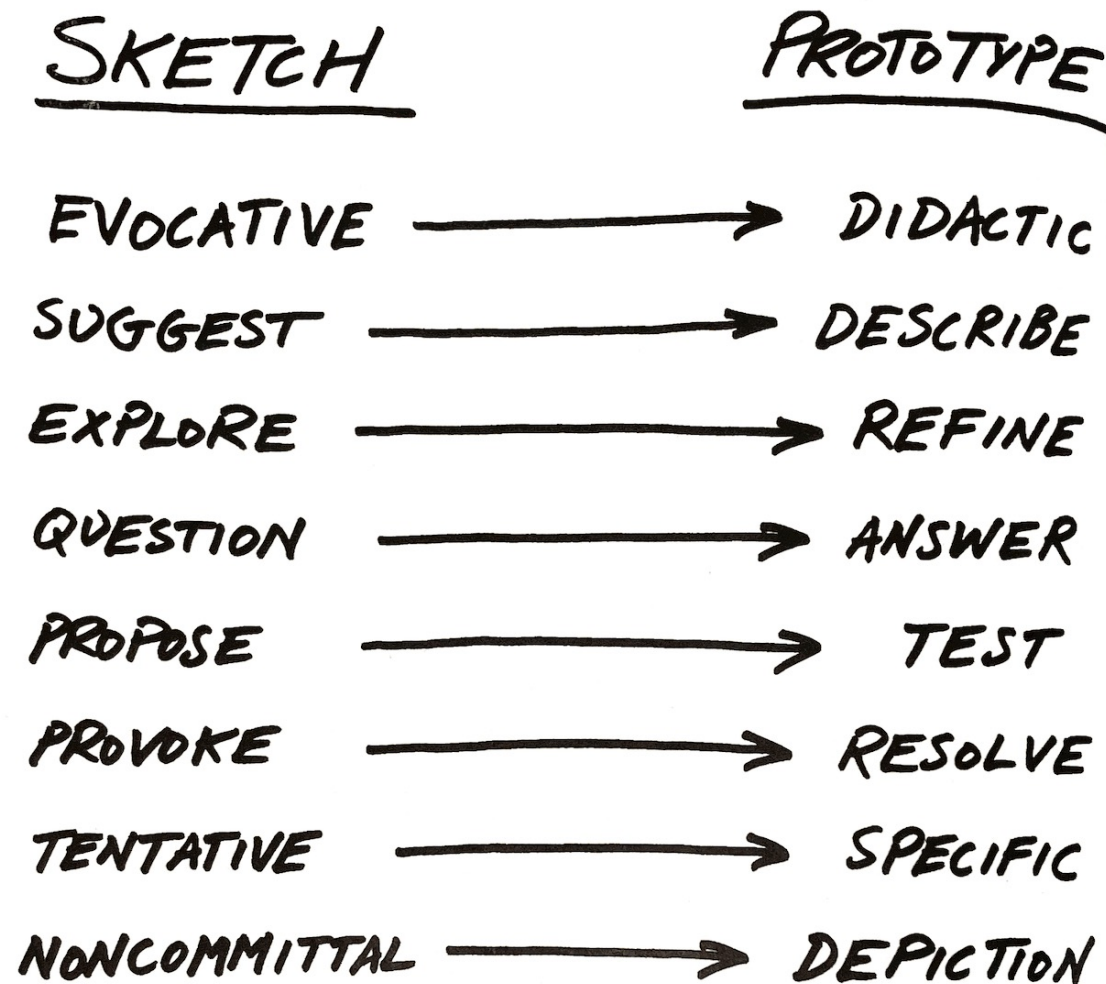- 1m string
- 1m tape
- one marshmallow

20 sticks
spaghetti

1 meter
tape

1 meter
string
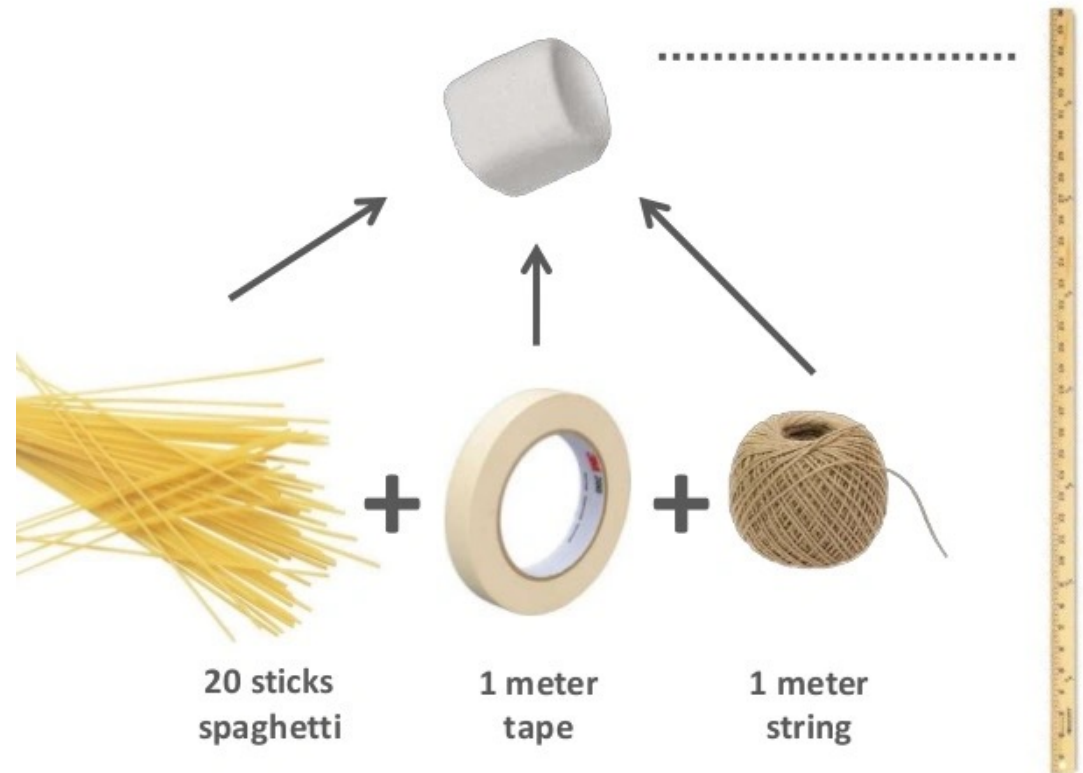
…versus prototyping solutions

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

20 sticks
spaghetti

+

1 meter
tape

+

1 meter
string

SKETCH   PROTOTYPE

EVOCATIVE ⟶ DIDACTIC

SUGGEST ⟶ DESCRIBE

EXPLORE ⟶ REFINE

QUESTION ⟶ ANSWER

PROPOSE ⟶ TEST

PROVOKE ⟶ RESOLVE

TENTATIVE ⟶ SPECIFIC

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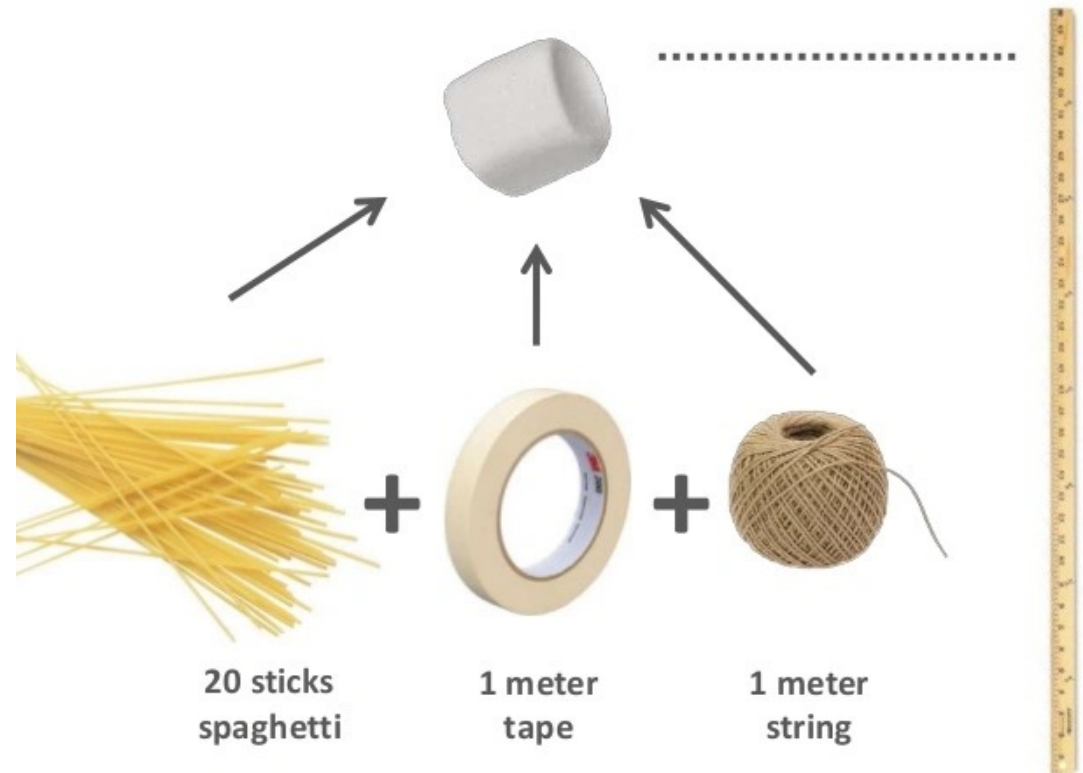
Figure 52: The Sketch to Prototype Continuum
The difference between the two is as much a contrast of purpose, or intent,
as it is a contrast in form. The arrows emphasize that this is a continuum,
not an either/or proposition.

10 Prototyping Principles

Unlock the power of prototyping. Resist the temptation of spending time and energy refining one direction only. Rather, use the principles described here to explore multiple directions with the same amount of time and energy. You will learn more and discover better value propositions.

Get "10 Prototyping Principles" poster

1
Make it visual and tangible.

These kinds of prototypes spark conversations and learning. Don't regress into the land of blah blah blah.

2
Embrace a beginner's mind.

Prototype "what can't be done." Explore with a fresh mind-set. Don't let existing knowledge get in the way of exploration.

3
Don't fall in love with first ideas— create alternatives.

Refining your idea(s) too early prevents you from creating and exploring alternatives. Don't fall in love too quickly.

4
Feel comfortable in a "liquid state."

Early in the process the right direction is unclear. It's a liquid state. Don't panic and solidify things too early.

5
Start with low fidelity, iterate, and refine.

Refined prototypes are hard to throw away. Keep them rough, quick, and cheap. Refine with increasing knowledge about what works and

6
Expose your work early —seek criticism.

Seek feedback early and often before refining. Don't take negative feedback personally. It's worth gold to improve your prototype.

7
Learn faster by failing early, often, and cheaply.

Fear of failure holds people back from exploring. Overcome that with a culture of rough and quick prototyping that keeps failure cheap and leads to faster learning.
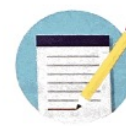
8
Use creativity techniques.

Use creativity techniques to explore groundbreaking prototypes. Dare to break out of how things are usually done in your company or industry.

9
Create "Shrek models."

Shrek models are extreme or outrageous prototypes that you are unlikely to build. Use them to spark debate and learning.

10
Track learnings, insights, and progress.

Keep track of all your alternative prototypes, learnings, and insights. You might use earlier ideas and insights later in the process.

4.2
Exposition phase

RECAPITULATING
SOME IDEAS

https://youtu.be/64GntbVwlGw
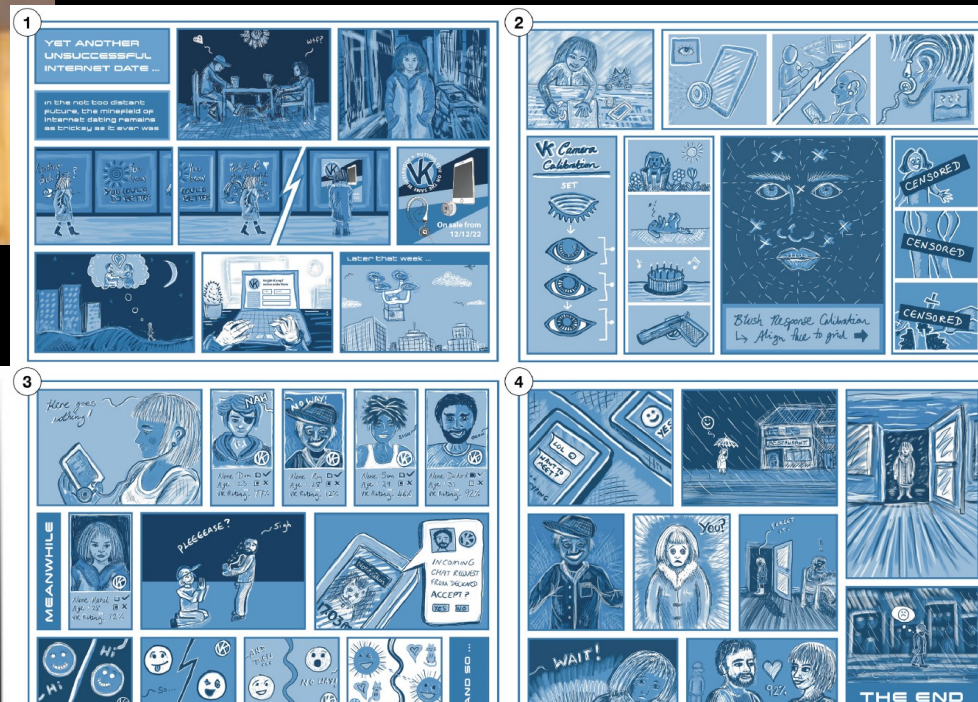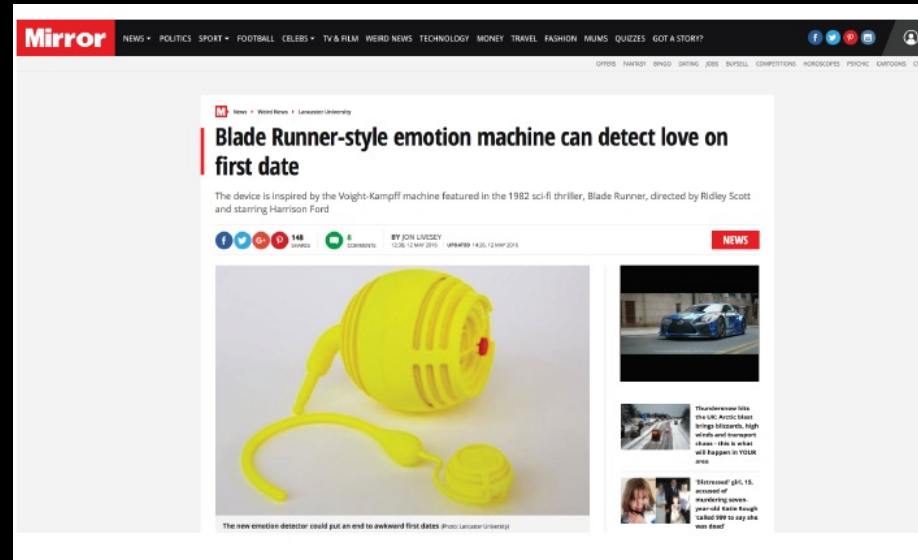
4.2
Exposition phase

The Power of Storytelling…

https://youtu.be/dSyyAcrsnT4

https://youtu.be/Nj-hdQMa3uA
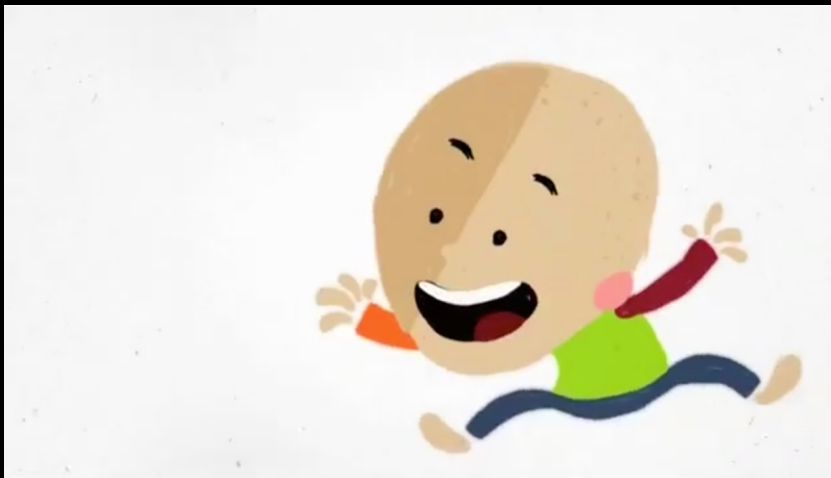
**4.3
Design
Thinking
Expectations**

QUESTION 1 of 4: A 'real life' engineering problem should be initially approached by:

❑ Strictly adhering to a 'recipe' that has already proven to work on similar situations

❑ Dividing the problem and then solving parts of it

❑ Writing down all the 'input data'

❑ Clearly establishing the boundaries of the problem

❑ Complexifying it, acknowledging all the issues gravitating around the problem's situation

❑ Getting rid of complexity by considering approximations and/or simplifications

❑ Other

VOTE!!! Go to www.menti.com and use the code **3181 3624**

**4.3
Design
Thinking
Expectations**

QUESTION 2 of 4: When solving a 'real life' engineering problem it is important to...

❑ Stick with our 'first idea', because it is usually the 'right one'

❑ Stick with our 'first idea' to have more time to develop it

❑ Stick with our 'first idea' because, coming from our intuition, it is usually the most original one

❑ Explore numerous ideas until we find the 'right one'

❑ Explore numerous ideas because it improves the chances to find an original one

❑ Other

VOTE!!! Go to www.menti.com and use the code **3181 3624**

**4.3
Design
Thinking
Expectations**

QUESTION 3 of 4: Design Thinking contribution to solve 'real life' engineering problems is mostly related with:

❑ Finding the problem

❑ Understanding the problem

❑ Ideating solutions

❑ Evaluating solutions

❑ Detailing solutions

❑ Communicating solutions

❑ Other

VOTE!!! Go to www.menti.com and use the code **3085 9974**

**4.3
Design
Thinking
Expectations**

QUESTION 4 of 4: Some of the Design Thinking tools potentially useful when solving real life engineering problems that I know and able to apply are:

❑ Brainstorming

❑ Storytelling

❑ Empathy map

❑ Analogies

❑ Role playing

❑ Mind map

❑ Other

VOTE!!! Go to www.menti.com and use the code **3085 9974**