

Teaching by Design 2020

for the United Nations (UN) Sustainable Development Goals (SDGs)

A Zoom conference in the Design Thinking Series

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Luisa Mok

The Division of Integrative Systems and Design (ISD), HKUST

- Academic background: **Design, Anthropology** (Hong Kong and Finland)
- Teaching background: **Design** (Singapore, Finland and Hong Kong)
- Industry background: practising **Industrial Designer** (Hong Kong and Germany)



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for the United Nations
Sustainable Development Goals (SDGs)



Teaching by Design for SDGs

Why Design for SDGs?

Brue Archer (1922-2005)

Head of Design Research,
Royal College of Art (RCA),
London, UK.

Archer, B. (1979). The three
Rs. *Design Studies*, 1 (1), pp.
18-20.

Horst Rittel (1930-1990)

Professor of Design
Methodology, Ulm School of
Design, Ulm, Germany.

Rittel, H. W.J. (1988). The
Reasoning of Designers.
Arbeitspapier zum
International Congress on
Planning and Design Theory
in Boston, August 1987.
Schriftenreihe des Instituts
fuer Grundlagen der
Planning, Universitaet
Stuttgart 1988.

Design, as a disciplinary knowledge, is useful to other
disciplines for **creative** problem solving (Archer, 1979); in
particular, **wicked problems** (Rittel, 1988).

Is design teachable?

The power of action in design is **natural talent** resided in design, same as creativity as natural talent that resides in design, which may be **cultivated and enhanced** through **training** or **education** (Buchanan, 2001).

Richard Buchanan

Currently professor of design at Case Western Reserve University, US.

Buchanan, R. (2001). Design Research and the New Learning. Design Issues. Vol 17 (4).

How to teach design for SDGs?



Teaching by Design for SDGs

Design with capital D:

teaching by design in non-design disciplines for sustainability

What is Design?

Design is to design a design to produce a design (Heskett, 2003:3).

what if...?

John Heskett, Design
theorist.

Heskett, J. (2002). Design: A
very short introduction.
Oxford: Oxford University
Press.

Design is to design a design to produce a design (Heskett, 2003:3).

Design

non-design

John Heskett, Design
theorist.

Heskett, J. (2002). Design: A
very short introduction.
Oxford: Oxford University
Press.

Thinking like a designer can transform the way you develop products, services, processes – and even strategy (Brown, 2008:1).

Design

Design thinking

Tim Brown, CEO of IDEO.

Brown, T. (2008). Design Thinking. Harvard Business Review. (August), Pp 1-9.

The Industrial
Revolution, 1879.

New technology



Incandescent electric light, Thomas Edison, 1879. First light that could be mass produced.

The Bauhaus
design, 1924.

New technology
and Design

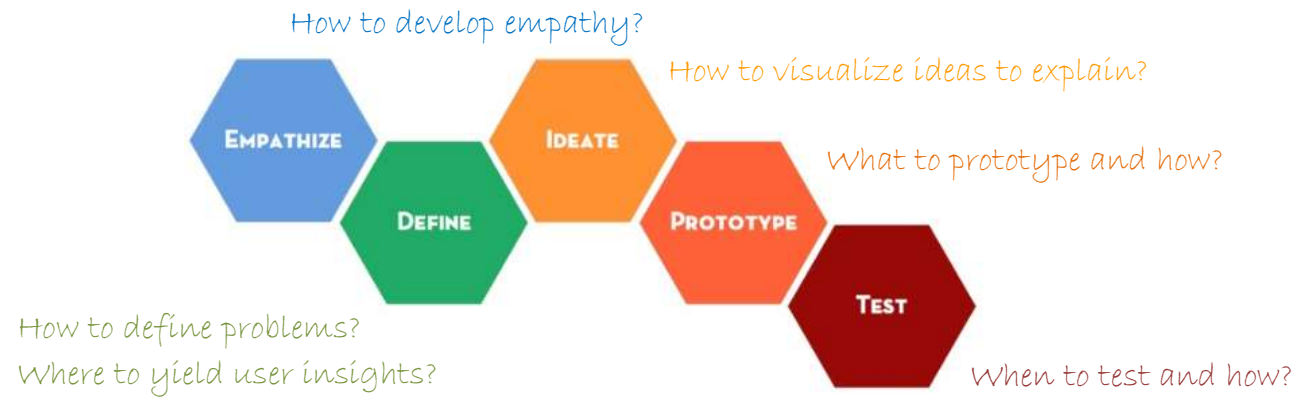


The Bauhaus Table Lamp, Wilhelm Wagenfeld and Carl Jucker, 1924.

“How to...” is important

Students can make something out at the end of the course, but as a teacher, is it something what you want?

The Design Thinking Process in 5 steps:



Stanford d.school
The design thinking
process.

Tom Kelly. Partner, IDEO.
Author of Creative
Confidence, 2013.

“Find your own unique application for Design Thinking,”
Tom Kelly, Oct 2018.

My first attempt, a failed design story

Understand people:
what and how to observe?
What and how to ask?

Define problems:
assumptions

Concept generation:
ask Taobao

ISDN1002
Redefining problems for the real needs.
2020 Spring.
Redefining hygiene problems: COVID-19

- Fieldwork research methods adopted from Anthropology
- Design probe research method, Empathic design

Bus hand-holds design probe

How to minimize the contact with bus hand-holds during COVID-19 outbreak?



Work by Alfred Ho, ISDN1002, 2020 Spring.

Eating design probe

How to enhance safe and happy dining at LG7 during virus breakout?



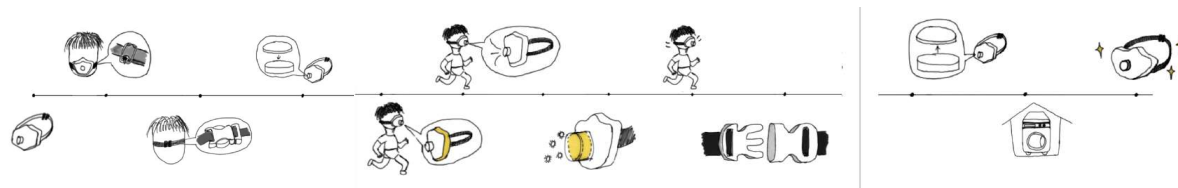
Work by Tian Jingqi, ISDN1002, 2020 Spring.

Running mask design probe

How to solve runners' breathing problem during COVID-19?



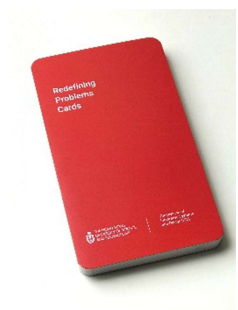
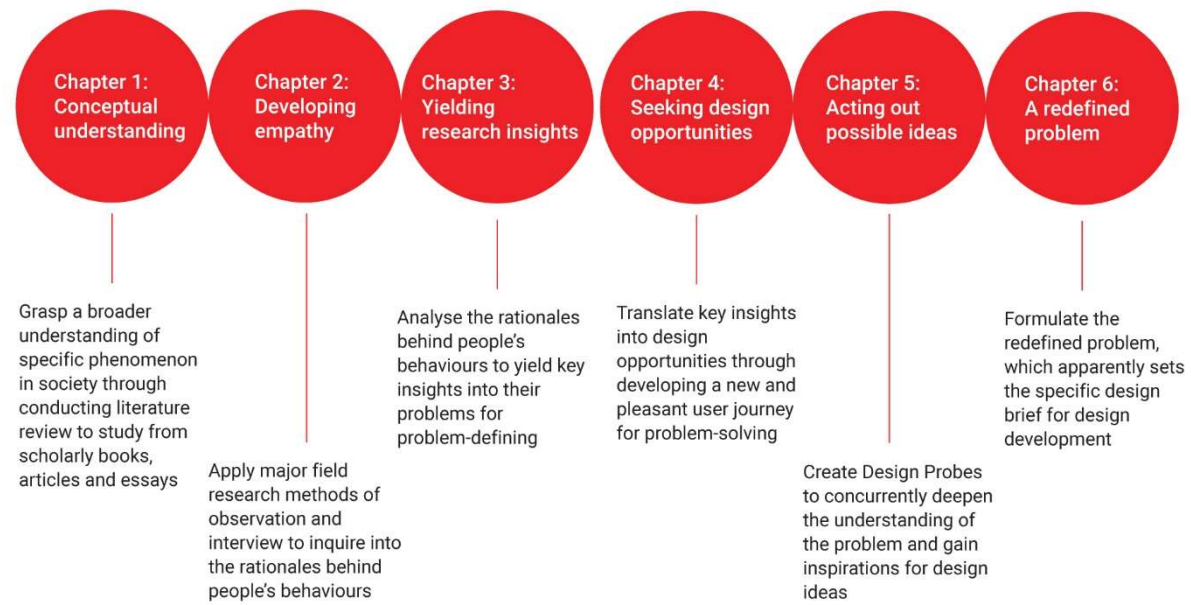
A new and pleasant user journey



Work by Gordon Chiu, Will Liu and Tom Notch, ISDN1002, 2020 Spring.

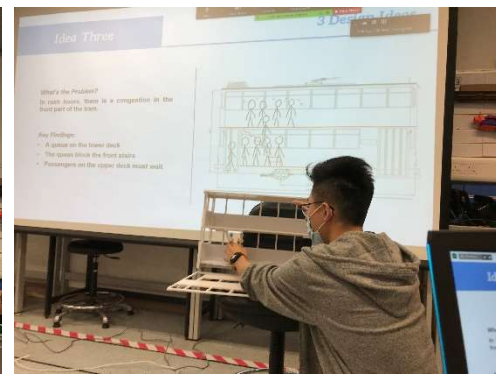
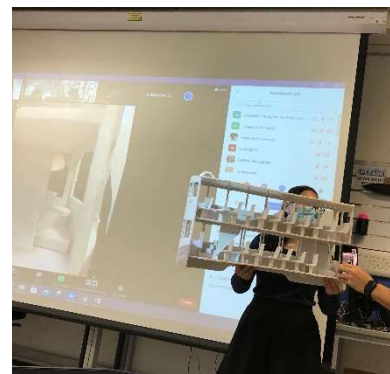
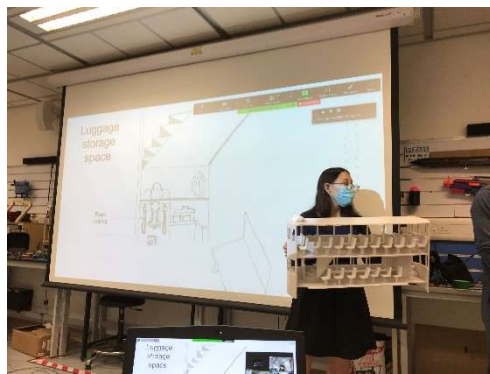
Redefining problems cards, 2020.

The Six-chapter Redefining problem process



Concept by Luis Mok. Design by Luisa Mok and Natalie Chan, HKUST.

ISDN2200 Systems thinking and Design.
2020 Fall.
Designing the 8th generation tram



Work by students of ISDN2200, 2020 Fall.

IDPO3500C

Design Thinking!

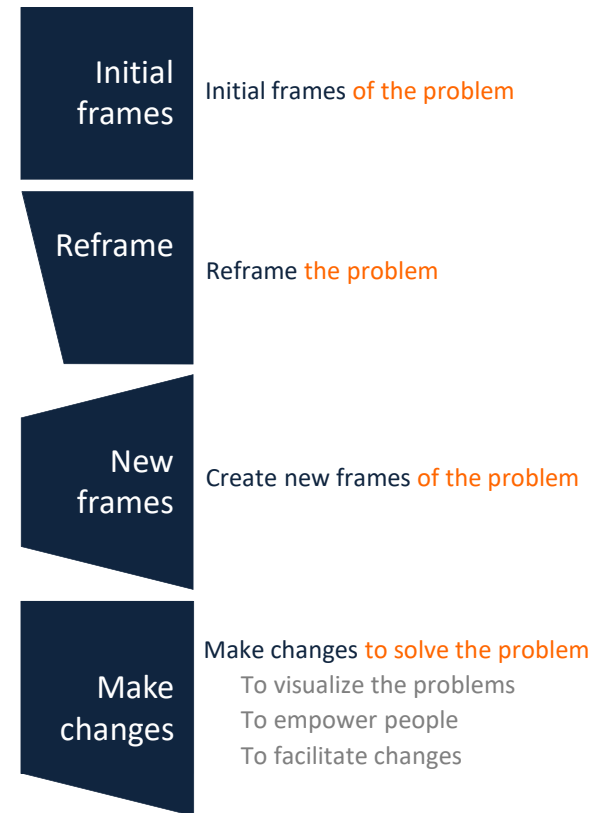
2020 Spring.

Reframing elderly care problems:
from the caregivers' perspective

Kees Dorst. Design theorist.

Dorst, K. (2015). Frame Innovation: create new thinking by design. Cambridge: MIT.

The design-based Frame Innovation process (Dorst, 2015)



Reframing elderlies' immobility due to fall:
from Family relationship to Friendship

DESIGN THINKING ON

Elderly Care Prob.

FROM CAREGIVERS PERSPECTIVE

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- Frame Identification
- Comprehension of the Persistence of the Prob.
- Current Key Stakeholders Identification

MAKE CHANGES

REFRAME

NEW FRAMES

THE FRAME INNOVATION

Visualisation

Empowerment

Facilitation

New Stakeholders Identification & Linkage Exploration

Recognition, Evaluation & Refinement of New Frames

CREATE NEW FRAME

Immobility due to fall

FROM FAMILY TO FRIENDSHIP

MAKE CHANGES!

Unboxing

HAPPINESS & MEMORY



The designerly way of thinking
An alien mode of reasoning (Archer, 1979).

Bruce Archer (1922-2005)
Head of Design Research,
Royal College of Art (RCA),
London, UK.

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Rs. *Design Studies*, 1 (1), pp.
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Design with capital D

Thank you.



The Division of
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