CONSIDERED DESIGN

a card deck for
learning to make

...the most of what you've been given!

Introduction

This deck is divided into 5 categories—**project inputs**, **project processes**, **project outputs**, **feedback loops**, and **ecosystems**—for the 5 phases of the design process.

It is intended to address the gap between class instruction *in* and real-world application *of* design.

Most activities in this deck are supposed to be presented without prior description of the 'learning goals', in order to better replicate actual design processes.

Supplementary materials for particular cards, as well as remixed activities, may be found online:

Have fun!

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Feedback

Feedback and contributions are welcome!

Please submit feedback regarding your use of the deck (including positive experiences and suggestions for improvement), as well as **new card suggestions** (making sure to including the attribution to be included) through the following form:

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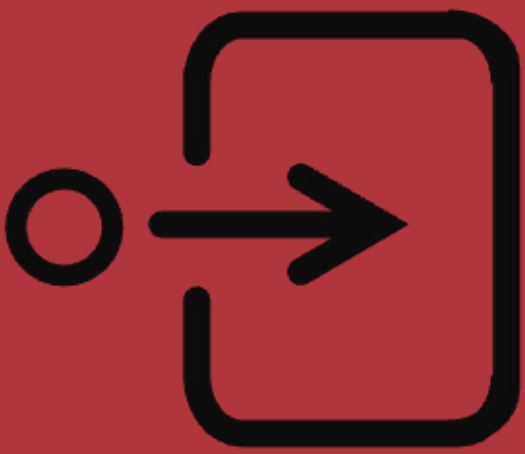
PROJECT



INPUTS

Measured Madness

Time: 15 min

Materials: 'trick' ruler, paper, scissors, pencil (one set per group)

Instructions: Instruct each group to fold a paper airplane and write a 'tail number' for the aircraft ¼" from the trailing edge of the plane's wing.

Discuss the similarities and differences between the resulting planes and wing markings.

Outcome: Did anyone realize that the location of the 'tail number' varied not only due to choice, but because some rulers are inaccurate? Ask: how would they determine which rulers are accurate?

It can be easy to assume—but hard to verify—that the inputs or tools you use are accurate.

(supplementary information online)

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Satisficed Structures

Time: 15 min

Materials: paper, scissors, tape, printables

Instructions: Each group is shown the first projection of the object. Groups may elect to receive their construction materials and begin to build their object or wait 1 minute to receive the second projection. These groups may then begin building or wait 1 minute more to receive the third projection. Any groups remaining then receive the 3rd projection and have 1 minute to construct the object.

Outcome: How do mental models of the actual object change based on the limited information each group had? How do you know when you have enough information to make an informed decision or assessment of reality?

(supplementary information online)

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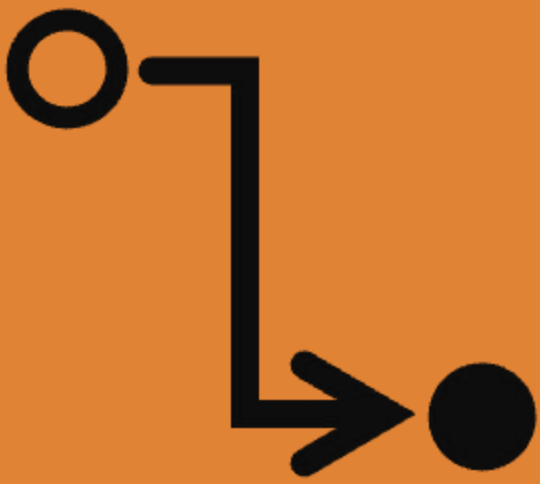
PROJECT



PROCESSES

Who's That For?

Time: 15 min

Materials: paper, pencil, list of design 'clients'

Instructions: Each student is given a design client, for whom they must design a simple object, such as a chair or a pen (one object should be selected for the entire class). Discuss the similarities and differences between the resulting plans.

Outcome: How do the features of a design, developed for one person in particular, either help or hinder when that design is applied to someone else?

How can designs intended for one client or use find new uses—whether for good or ill—when applied to new audiences?

(supplementary information online)
*(this activity may be run after **The Perfect Chair**)*

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The Perfect Chair

Time: 15 min

Materials: paper, pencil

Instructions: Each student is tasked with designing the "perfect chair" (or other simple object, with one object selected for the entire class).
Discuss the similarities and differences between the resulting plans, asking students to explain what makes their design "perfect".

Outcome: For whom is the chair "perfect"? What makes *that* the "perfect" chair?

It is common to make some assumptions in the design process, but it is important to understand when assumptions are being made—and to remember that that is all that they are: assumptions.

(supplementary information online)
*(this activity may be run before **Who's That For**)*

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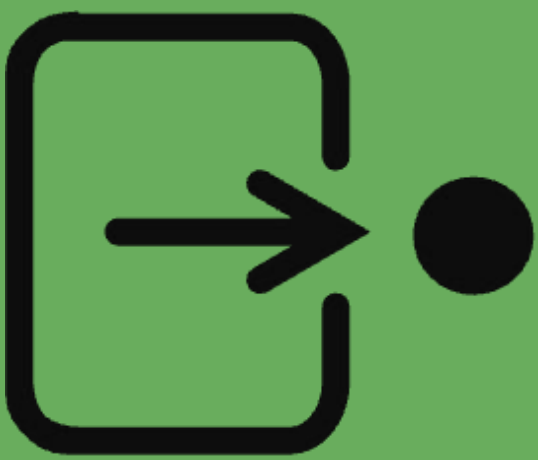
PROJECT



OUTPUTS

Resume Ratings

Time: 15 min

Materials: resumes and job listing

Instructions: Instruct each participant to rate each resume on a scale of 1 to 5 stars. Each participant (or group thereof) is given a different instruction regarding evaluation (e.g. "The 'average' worker at this company would be above average anywhere else. Give applicants of only 'average' quality less than 3 stars."; "Five stars are given to all applicants who meet the requirements."; "Five stars are reserved for exceptional applicants. Those who simply meet the requirements should receive 4 stars.")

Compare results across groups.

Outcome: (How) might a third party (mis)understand the different ratings?

Simplified outputs of an evaluative process can obscure key decisions and assumptions of that process.

(supplementary information online)

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FEEDBACK

LOOPS

Drawing Danger

Time: 15 min

Materials: paper, washable markers, tape

Instructions: Tape paper to the back of each person and line everyone up in a chain. The first person in the chain will get a code word or phrase- they need to draw that on the paper on the back of the person in front of them. The next person will then try to figure out what the drawing was and do their own drawing for the following person. This pattern is repeated until the last person draws what they felt and tries to guess the initial code word or phrase.

Outcome: How can a concept get distorted by iteration without clear communication? What happens when you use imperfect outputs to create new inputs into a system?

(supplementary information online)

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ECOSYSTEMS

Beer Game

Time: 45 min

Materials: paper, tokens representing beer

Instructions: Manage a supply chain of beer distribution with groups taking on the role of factory, distributor, wholesaler, and retailer. Each group has to make decisions to minimize their costs with the limited information they have based on their specific role in the supply chain.

Outcome: How does the imperfect flow of information influence outcomes in situations like these? How can communication be more effective to enable goals to be met?

The availability, quality, and speed of information can fundamentally change outcomes.

(supplementary information online)

1960 Jay Forrester

Can You Break It?

Time: 30 min

Materials: paper, pens

Instructions: Have everyone break off into pairs. Each person gets a prompt to design a particular object for a specific user. Then, they explain their idea to the other. Their teammate now has to come up with a way to "break" the idea by finding ways to misuse it or use it negatively in ways that were not the intended use case. Then, the designers should redesign the ideas to mitigate these shortcomings that have been identified. Repeat this cycle several times and see how the ideas evolve and whether or not the final product is something that is useful at all anymore.

Outcome: What happens if you design something that gets used in ways that were not intended? Who is responsible?

(supplementary information online)

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Tarot Cards of Tech

Time: 30 min

Materials: paper, pens, printouts

Instructions: Split the group into pairs (12 teams is ideal) and assign each pair a common product or technology that most people are familiar with. Then, have each group pull a card from the Tarot Cards of Tech deck. The card has a scenario and list of questions on it that participants should discuss in the context of their assigned product. Finally, regroup for a large discussion regarding the new insights that have come about from the exercise.

Outcome: What are potentially unintended consequences of the technologies we create or use? How can we train ourselves to think about them in advance of putting them out into the world?

(supplementary information online)

2018 Artefact Group

RES.TLL-008 Social and Ethical Responsibilities of Computing

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