Test and Validate

Learning to
Learning to Test & Validate
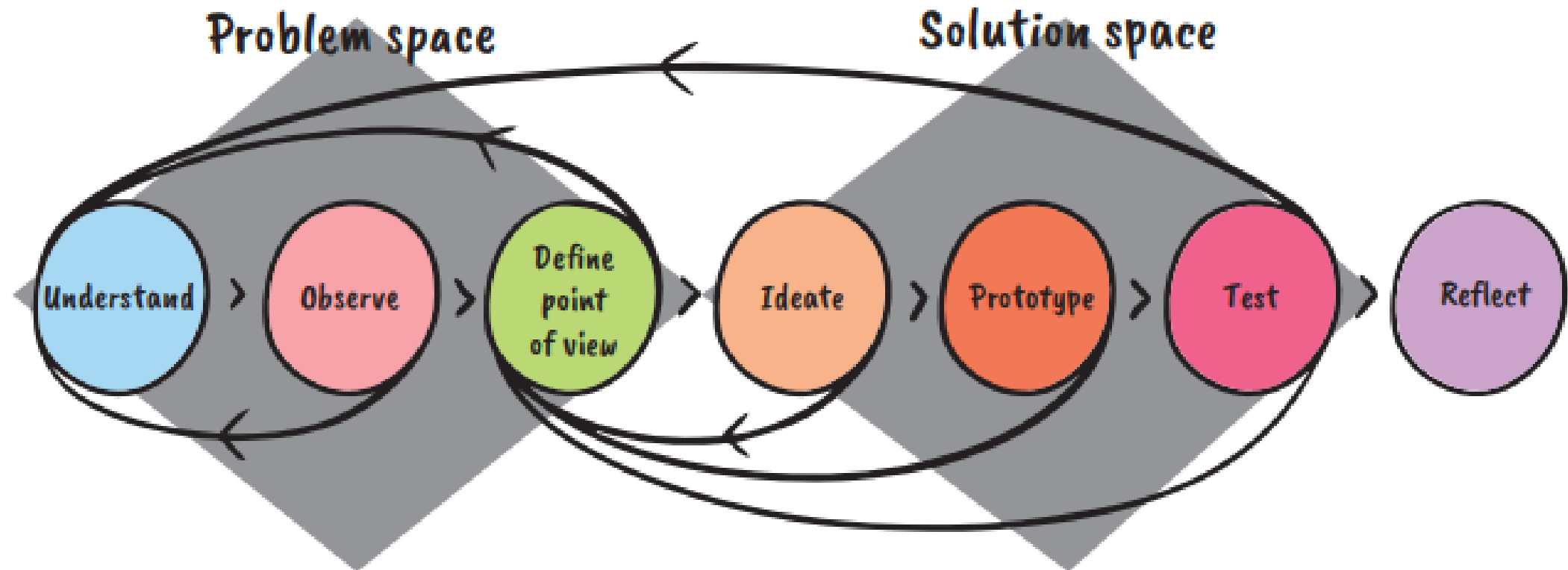
ITX 2005 Design Thinking

Content of Learning

I Finding out what makes you happy Concept

1. Shadow

II Test of the Respective Prototype and User

1. Testing Sheet
2. Feedback Capture Grid
3. Powerful Questions in Experience testing
4. Solution Interview
5. Structured Usability Testing
6. A/B Testing

[1]

Problem space

Solution space

Understand > Observe > Define point of view > Ideate > Prototype > Test > Reflect

3

Test the idea / plan to see how it feels and improve it.

- Testing requires curiosity and the willingness to try something new.
- It is not a matter of thought experiments but the real experience.
- We cand discard the underlying ideas and begin with a new idea if not

love it …   accept it …   reframe it …   or trigger change

[2]

4
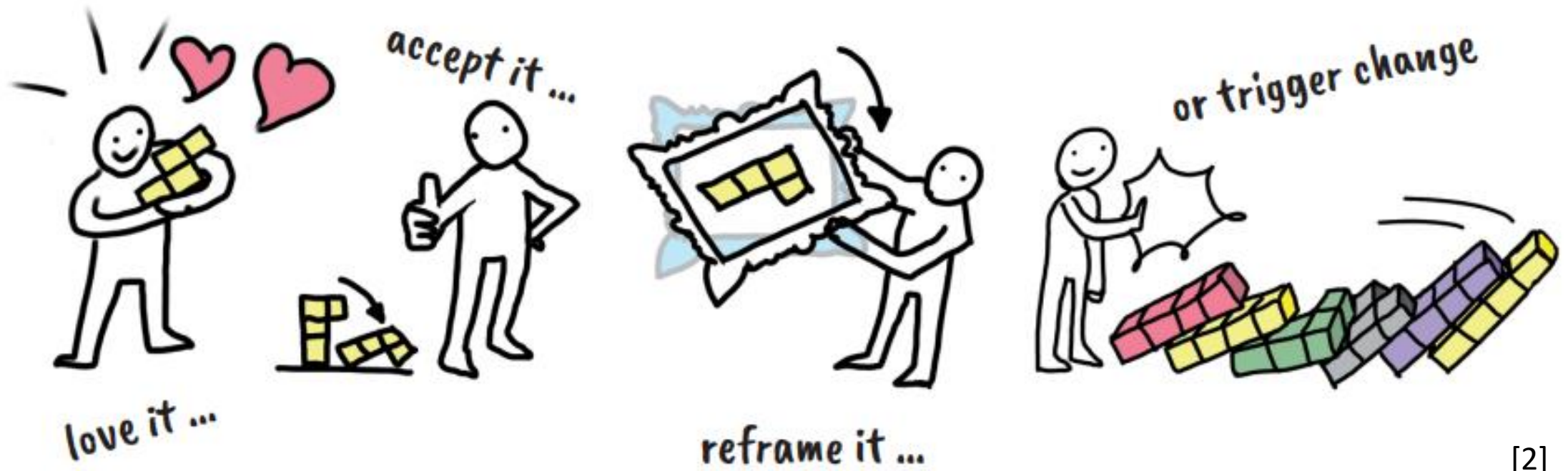
Experience in the Ideal outcome and gain new insight

- We will find out what is really feel like only when we experience the situation in a real environment.

- So, we act by implementing small prototypes of stages and ideal outcomes.

[2]

I. Finding out what makes you happy

- "Getting a taste" in the context of a one-week internship yields important insights.

- Shadowing (Participatory observation)

Shadowing

- Talk about your ideas and share them with others

- Interview experts, people who do what you want to do, talking with people you are close to

- Countless people in your network with whom you can share and discuss your ideas.
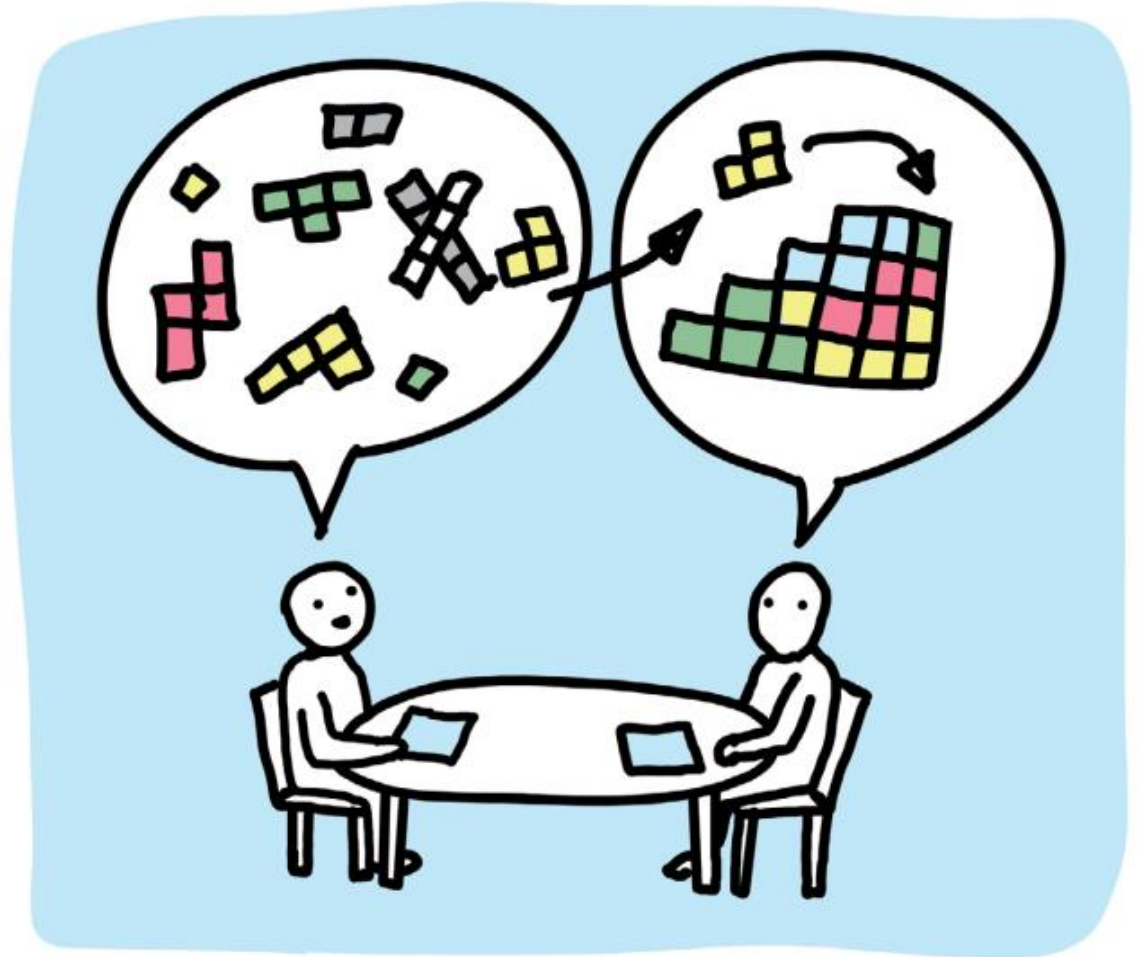
[2]

How Sue tests her prototypes

Sue has discussed her idea of a recurring social media post on the subject of poetry with her friends. Most responded positively and encouraged her to create a post. Many also offered to "like" the post, in order to spread it virally and attract attention.

[2]

II. Test of the Respective Prototype and User

- Not only receive feedback on the prototype but also:
  - Refine views of the problem and the user,
  - Reconnect to the understand and observe phases to yield a new Point of View (PoV)

1) Testing Sheet

- Plan a systematically test and Define the roles
- Document the test and the results
- Consider test criteria to be verified and validate the needs
- Develop empathy for the user

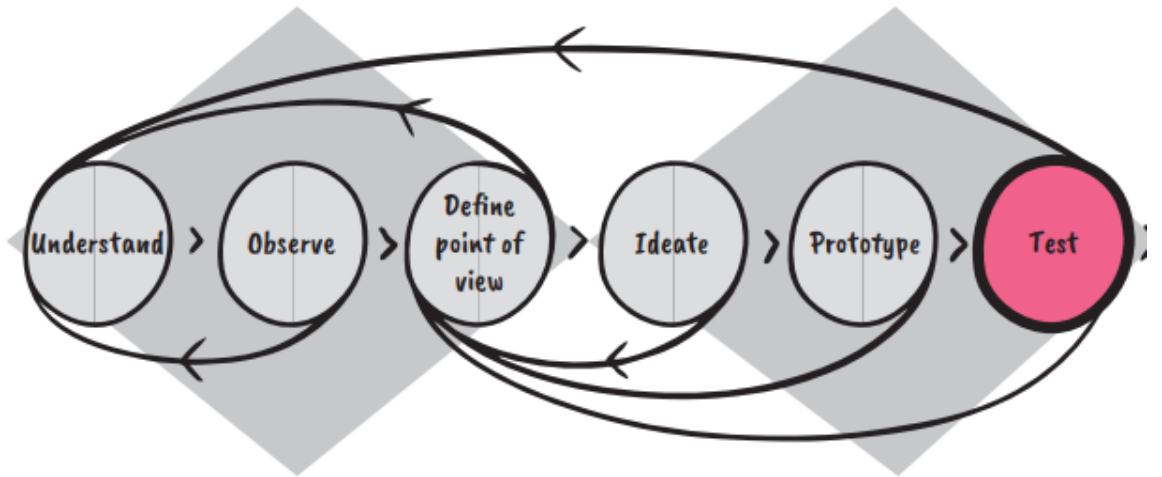

[1]

Testing Sheet: Information

- Learn about the users needs by allowing user interact with the prototype

- Plan the test (and its sequence), role (and their key questions)

- Perform test run with 2-3 peoples

- Documentation of test – photo, quotes or short video, are needed to share the findings with the team.

[1]

Template: Testing sheet

Test scenario

1 Brief description of the test scenario | Test criteria

Procedure | Roles | Questions

Test results

3 Documentation | Learnings

[1]

Testing Sheet: How to apply

1. Test Planning
2. Test Procedure
3. Test Documentation

[1]

Testing Sheet: How to apply

1. Test Planning:
   - Define where the test should take place
   → Is it in the context of the problem on site on the user's premises?
   - Define the test criteria prior to the test
   - Plan the sequence, assignment of riles and key questions
   - Define who will ask the questions, note and observe and document

Test scenario	
① Brief description of the test scenario	Test criteria

[1]

Testing Sheet: How to apply

2. Test Procedure:
   - Run the test and observe the user keenly during the test
   - Ask for the feedback for further decision and improvement
   - Write the most important quotes

Procedure	Roles	Questions

[1]

Testing Sheet: How to apply

3. Test Documentation:
   - Document with photos, statements and video
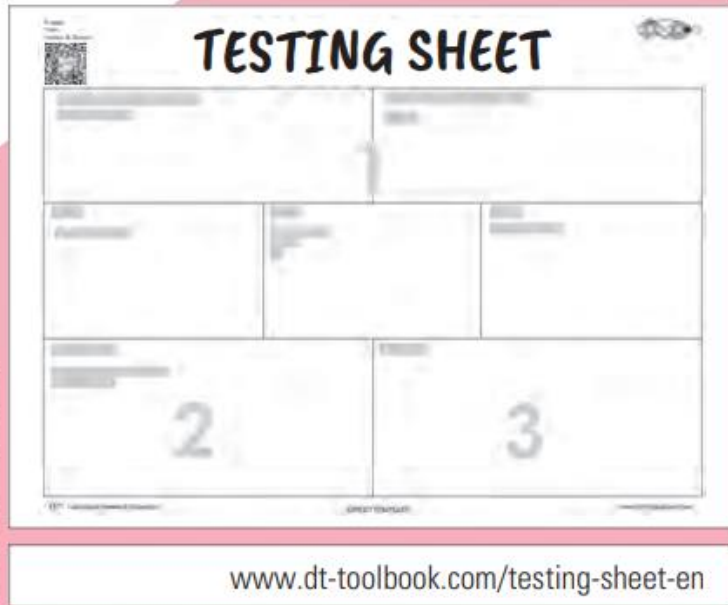   - Summarize the main findings and learnings

Test results

Documentation	Learnings

3

[1]

Testing Sheet

Tool for download

TESTING SHEET

www.dt-toolbook.com/testing-sheet-en

Key learnings

- Through the tests, we get feedback on the prototype and on the user as well.
- Plan the test situation, think about what the test sequence will be like and which team member will play which role.
- The documentation of the tests is important so the results can later be shared with the team. The test sheet template can help in this regard.

[1]

2) Feedback Capture Grid

- Make quick structured nots of feedback on ideas

→ Test the first prototype quickly with four questions

- Collect and cluster the test results

- Narrow down these problems , solutions, personas, ideas and further develop prototypes in the basis of the finding

Feedback capture grid

I would like... to test my prototyped ideas quickly and simply and write down the results for further development.
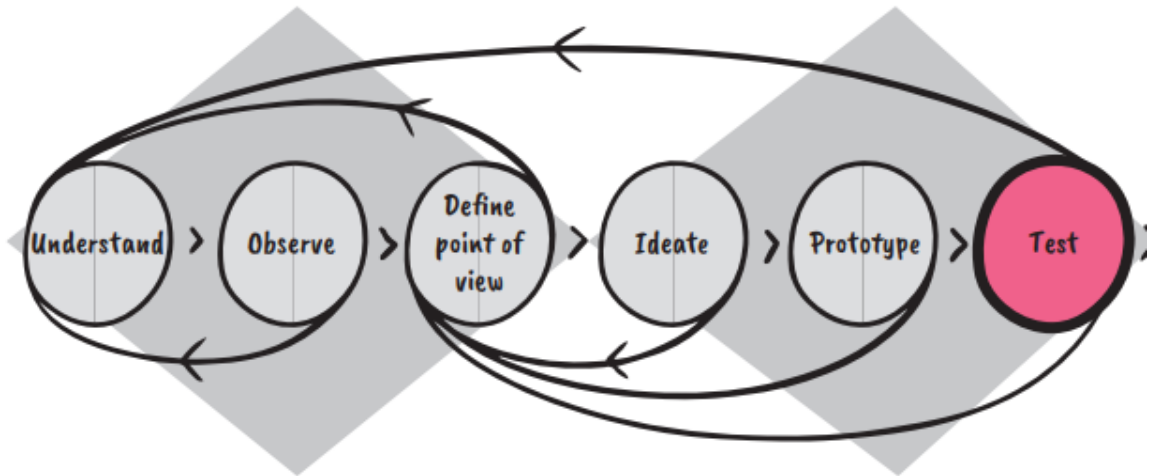
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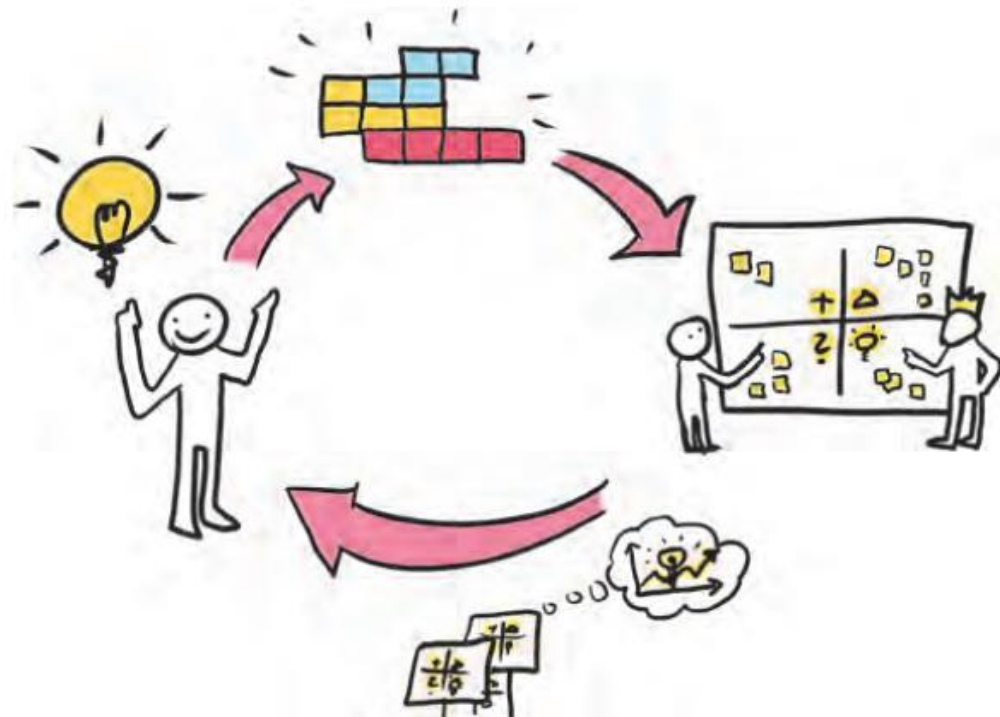
Feedback Capture Grid : Information

- It support the testing of ideas using prototypes.

- Aim to acquire how well an idea solves the identified user problem

- Used for obtain feedback on the process, workshop.

[1]

Template: Feedback capture grid

I like
Things you like or find remarkable

I wish
Constructive criticism

Questions
Questions that have arisen from the experience

Ideas
Ideas that have arisen from the experience or presentation

[1]

Feedback Capture Grid: How to apply

After developing an elemental prototype (low fidelity prototype), information about the persona, need and problem hypothesis will be conducted.

[1]

Feedback Capture Grid (FCG): How to apply

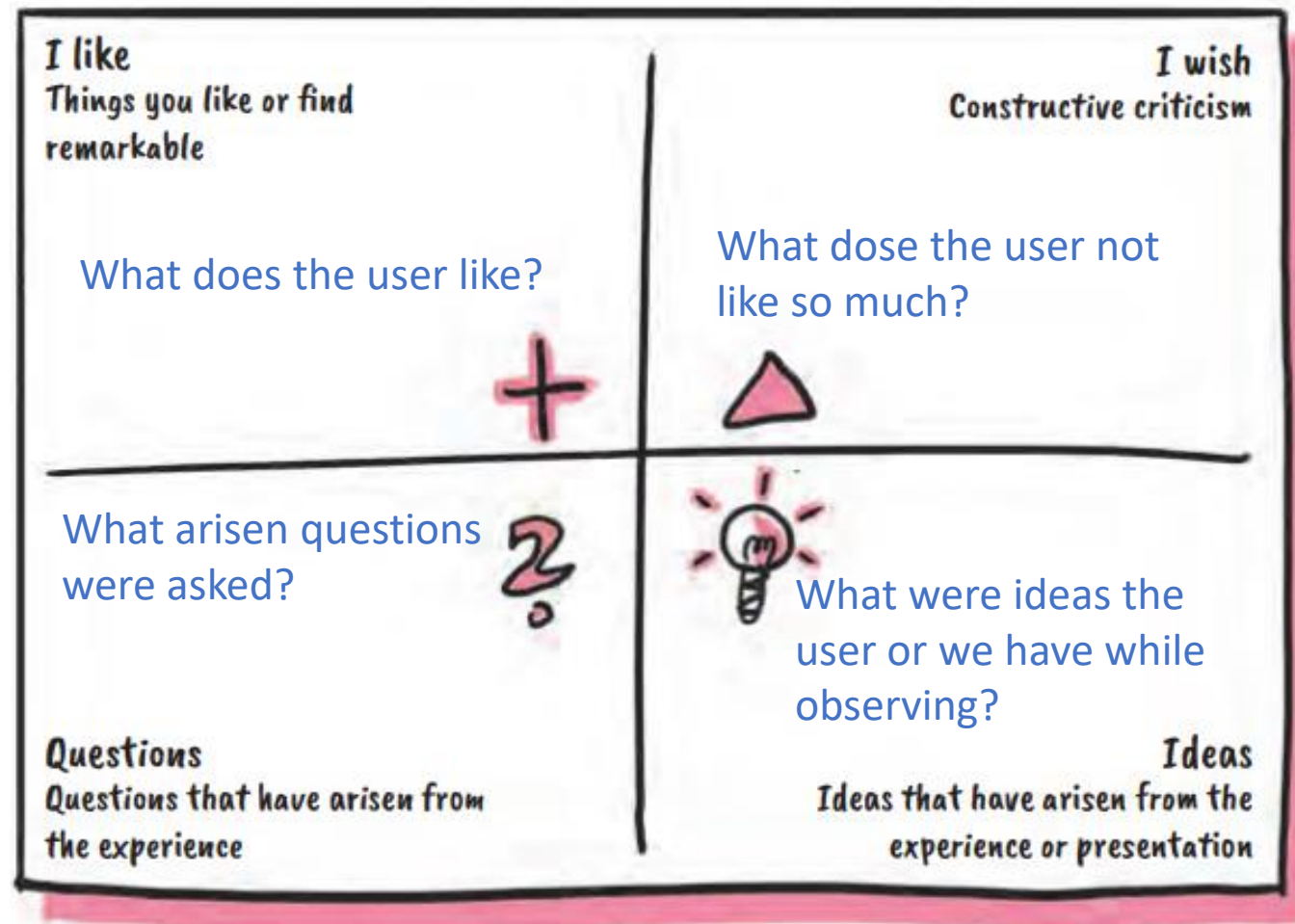1. Ask a test with the tester who are seeing and experiencing the prototype to think aloud

I like
Things you like or find remarkable

What does the user like?

I wish
Constructive criticism

What dose the user not like so much?

What arisen questions were asked?

What were ideas the user or we have while observing?

Questions
Questions that have arisen from the experience

Ideas
Ideas that have arisen from the experience or presentation
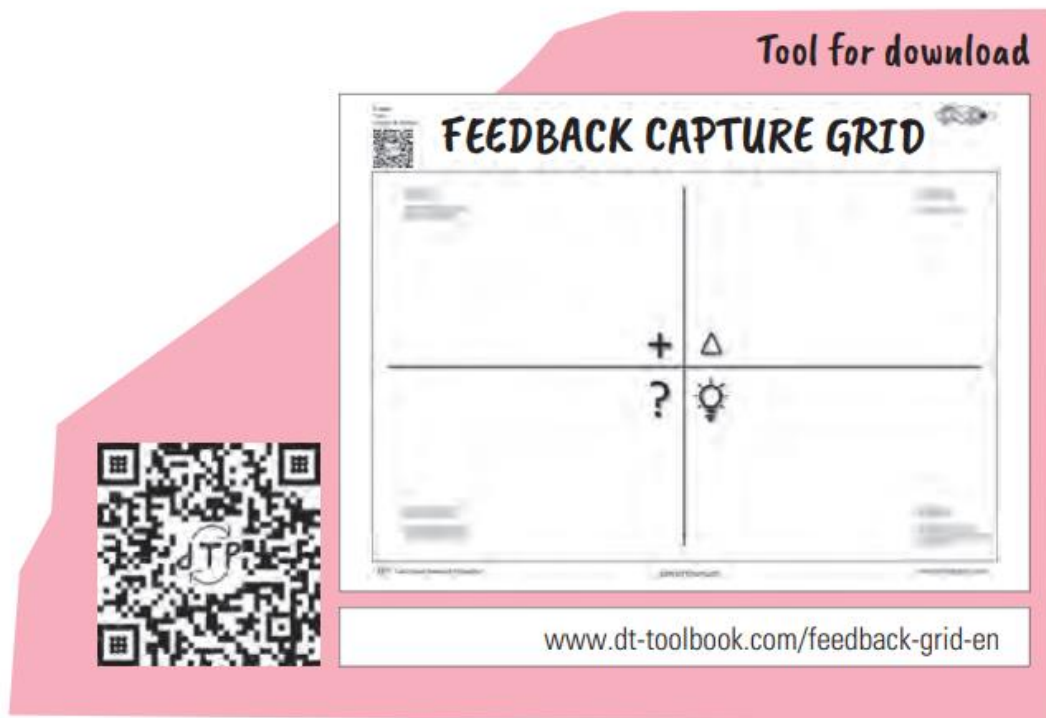
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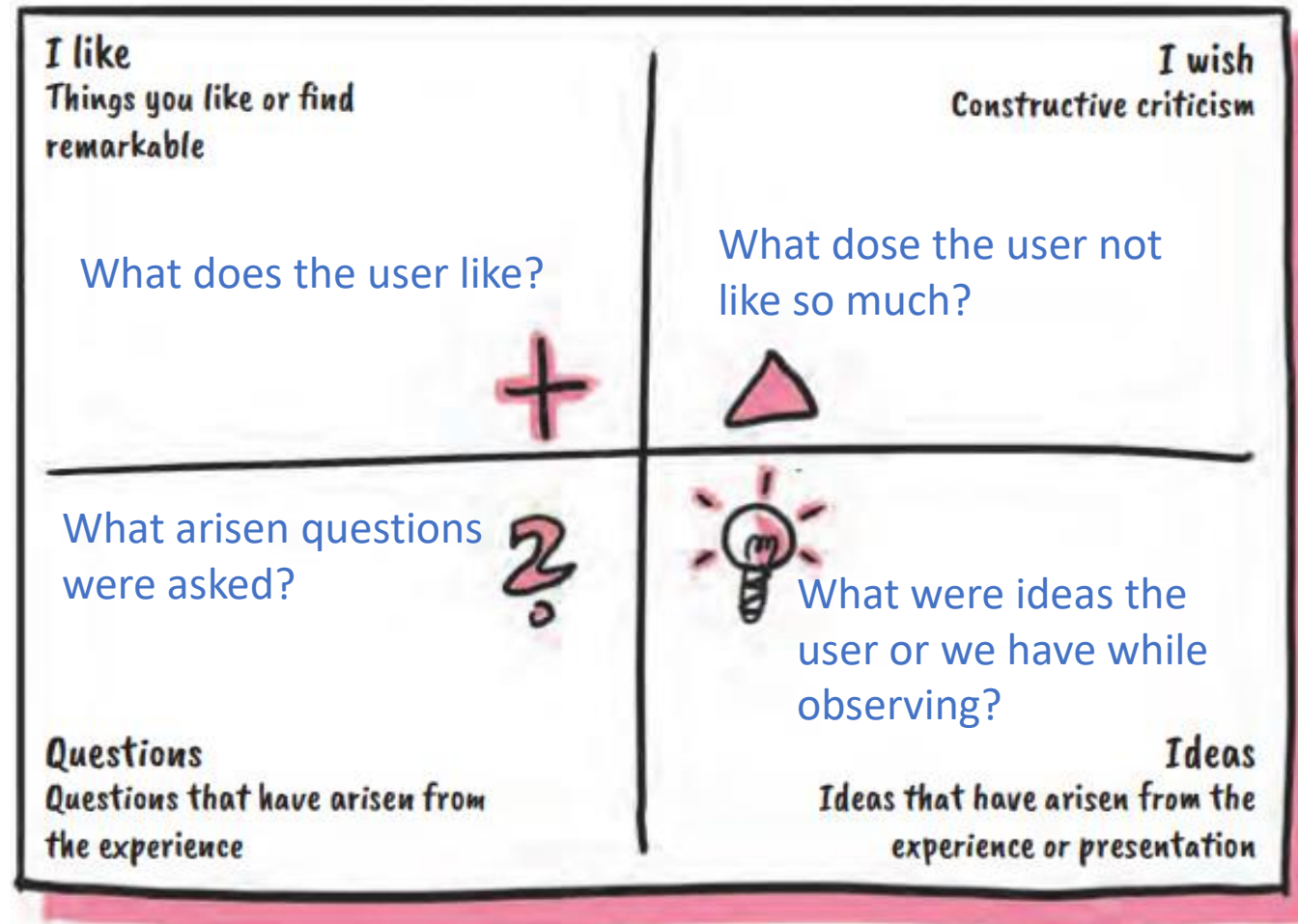
Feedback Capture Grid (FCG): How to apply

2. Ask "Why?" to understand the answers of the tester even better.

Pay attention to emotions, conflict body language and reaction

I like
Things you like or find remarkable

What does the user like?

I wish
Constructive criticism

What dose the user not like so much?

What arisen questions were asked?

What were ideas the user or we have while observing?

Questions
Questions that have arisen from the experience

Ideas
Ideas that have arisen from the experience or presentation

[1]

Feedback Capture Grid

Tool for download

FEEDBACK CAPTURE GRID

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? | 💡

www.dt-toolbook.com/feedback-grid-en

Key learnings

- Always conduct interviews with two people.
- Don't sell the idea but listen with curiosity, observe, and learn.
- Discuss the findings with the team and formulate a new shared point of view from them.

[1]

3) Powerful Questions in Experience Testing

- Find out the real user and whether it works for the user like

- Obtain feedback: "Solve it", "Change it" or "Leave it"

- Gather qualitative and quantitative data by asking the right questions to discern whether problems occur with the experience or the use.

Powerful questions in experience testing

I would like...

to evaluate ideas, prototypes, services, or a product by testing them with real customers or users.
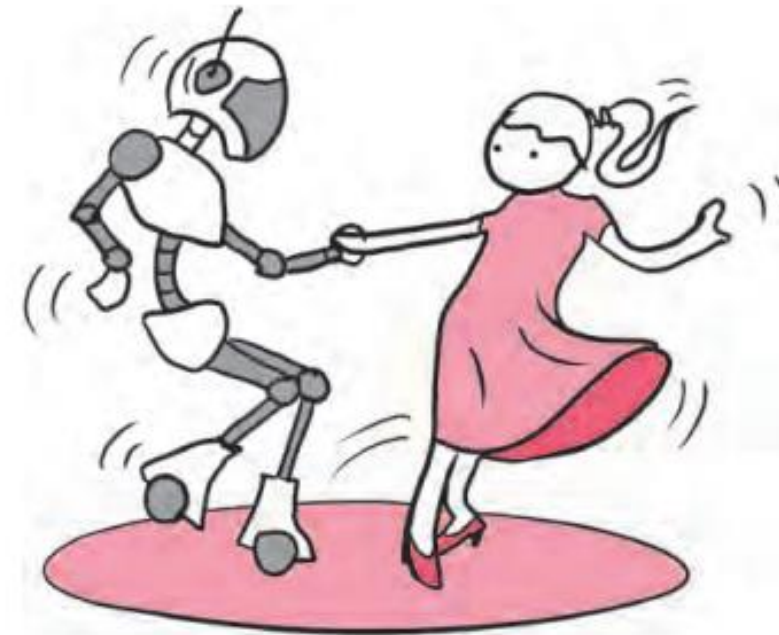
[1]

Powerful Questions in Experience Testing : Information

- As early as with low-resolution prototypes, we should pose the right questions.

- The heuristic evaluation can be used as an informal appraisal to evaluate a product and service based on best practices, standards or guidelines.

[1]
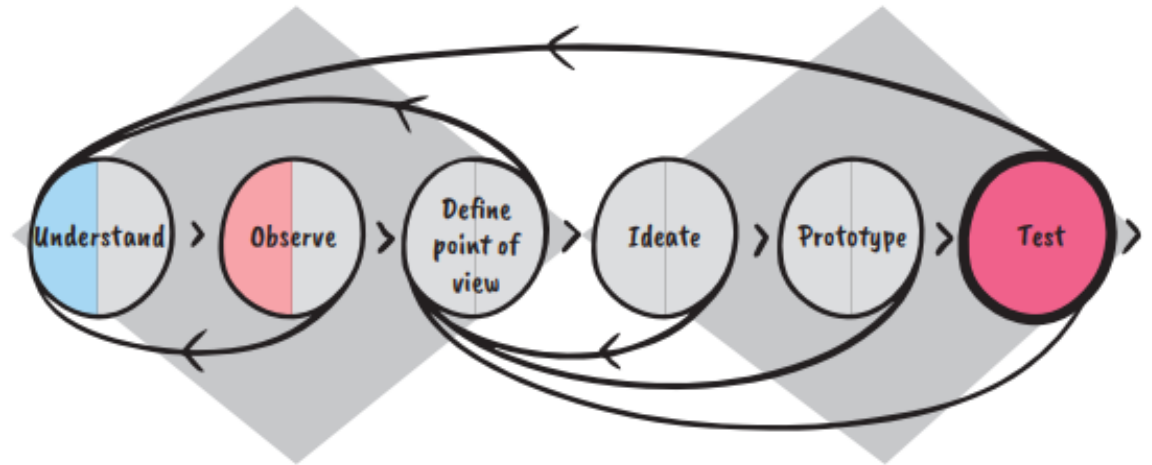
Ask the right questions when testing [1]

① Test lo-fi prototypes

At this stage, we might have no more than a rough idea or the proverbial sketch on the napkin. For the validation of those ideas, the following questions have proven useful:

- What is the problem your idea solves?
- How do users solve this problem today?
- Can the user think of another product with similar characteristics?
- What made other solutions fail?
- Do the users understand the benefits of the product or service?
- How does the user rate the product or service?
- Can the user think of competing products?
- What has the app/website/function, etc., been designed for?
- Does the potential user actually have a need for this product?
- What other objects or interactions does the user himself imagine?
- What use scenarios can he/she imagine?

② Test med-fi prototypes

Based on the feedback, we designed initial wireframes for our rough concept. They are neither interactive nor functional but they illustrate what should be used and how it should be used. Good questions help steer the project in the right direction and address the sequence and simple elements in the respective experience.

- Does the prototype do what is expected of it?
- What is the users' reaction to the product design?
- As soon as we show the prototype, does the user understand what it does?
- How does the prototype meet the expectations of the user?
- What features are missing?
- What is in the wrong place or unnecessary?
- How does it feel to the user when he uses the prototype?
- If the user had a magic wand, what would he change on the product?
- How high is the probability that the potential user will use the finished product in the future?

③ Test hi-fi prototypes

Through further iterations, the resolution of the prototype has improved. It is usually a simple copy of the ultimate solution, that is, a semi-functional prototype. The prototype should be interactive and be able to carry out the functions we have planned. What is missing is the glamour and beauty of a final product. Questions:

- Does the prototype do what it is meant to do?
- Does the design of the product match its purpose?
- What would the user like to do first with the product? Does this possibility exist?
- Is the user confused when using the product?
- Is the user distracted by something when using the product?
- Are there any functions that are completely ignored by the user?
- Is the navigation sensible and intuitive?
- Do the users feel that the product was developed for them?
- What would prompt the user to use this product more often?
- How likely is it that the user recommends the finished product to a friend?
- How would the user describe the product in his own words?

Powerful Questions
in Experience Testing
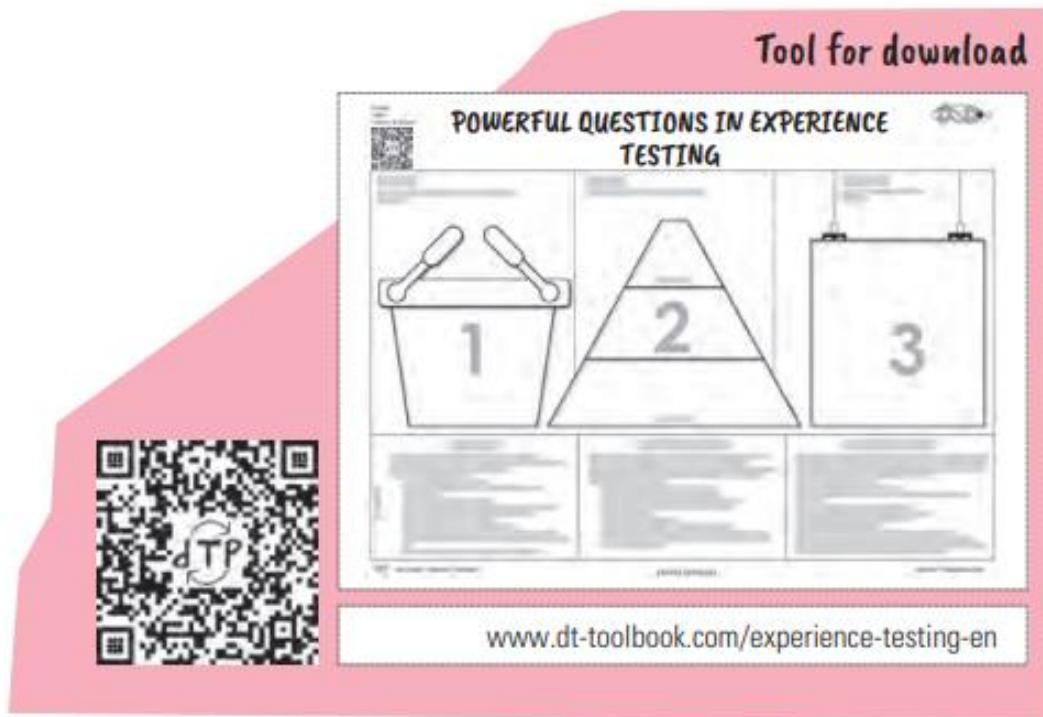
Key learnings

- The only person assigning value to a product or a service is the user/customer.
- Ask the user in a targeted manner and give him the feeling that his answers are valuable.
- Have the user/customer think aloud during the test.

[1]

4) Solution Interview

- Measure the value → Understand whether a solution is valued by users in term of functionality, user-friendliness and user experience.

- Understand the needs, behaviors and motivations of users more deeply.

- The goal is to test solutions that were developed and whether they are accepted by the users addressed.

Solution interview

I would like...

to find out whether a solution is accepted by the user.

It feels good. In this size, I would spend 100 dollars on it.

[1]
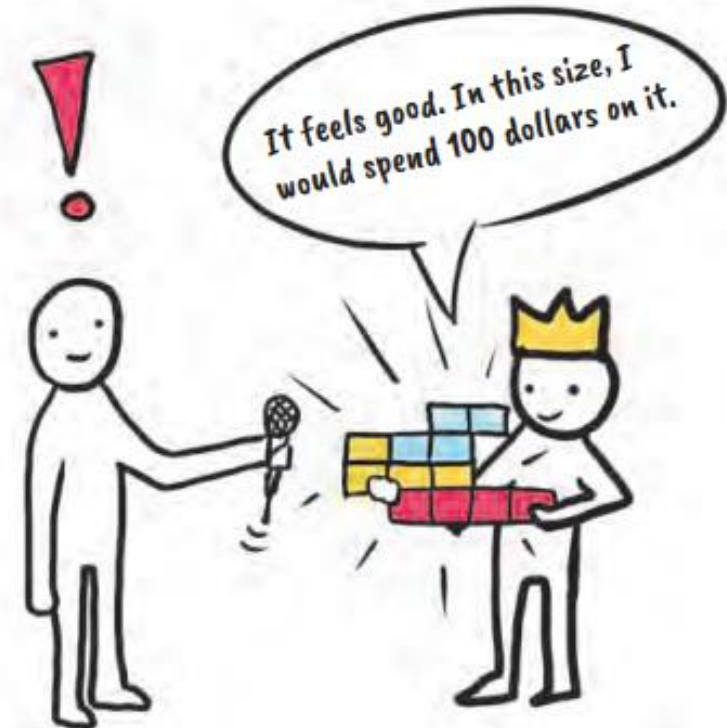
Solution Interview : Information

- Used in the advance (high-resolution) prototype

- It mainly used in the solutions space and lead to the "acceptance" of the final prototype.

- IT supply insights on the acceptance of a solution by user.

[1]
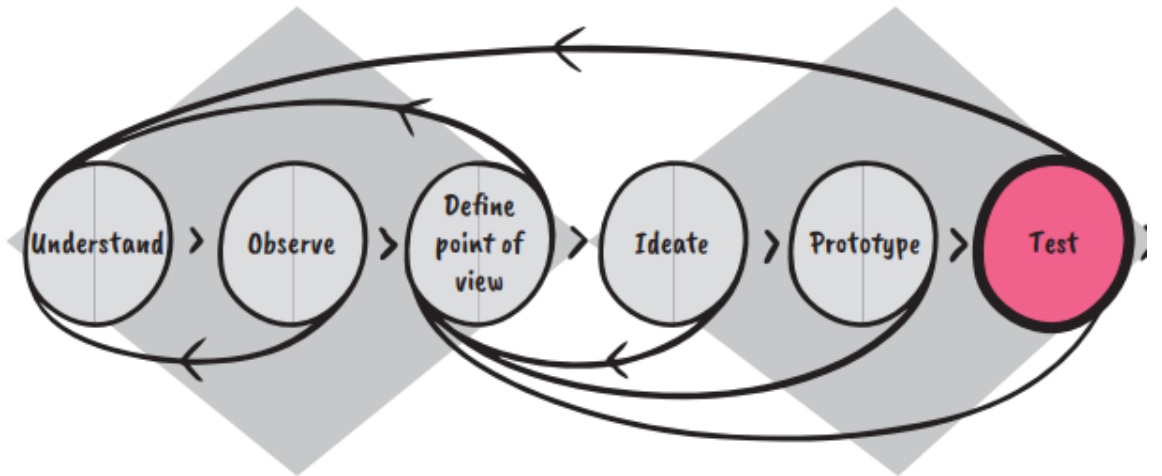
Solution: Solution to be tested

Context ①

Task 🔍	Goal 🎯	Persona 👤
• Design challenge of the project • "How might we…" question	• Interview goal • Key question that should have been answered after the interview	• Personas and their needs (focus of the solution) • Point of view statement

Interview planning ②

Interview candidates 💬✓	Interview team 👥	Material ⚙️
• Identify interview candidates that are similar to personas • Determine the number of interviews required	• Size of the interview team • Role assignment	• Core equipment • Reference to the last interview • Supplementing materials
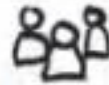
Interview guide ③

Agenda ⏱️	Content ☑️
1. Warm-up (time span:) 2. Introduction to the context (time span:) 3. Experience the solution (time span:) 4. Summary (time span:)	• Discussion points • Specific questions • Form of presentation of the solution

[1]

Solution Interview: How to apply

Goal is to check the impact of the solution or measure the value of the solution.

Task 🔍	Goal 🎯	Persona 👤
Context ①		
• Design challenge of the project	• Interview goal	• Personas and their needs (focus of the solution)
• "How might we..." question	• Key question that should have been answered after the interview	• Point of view statement

[1]

Solution Interview: How to apply

2. Determine the interview team, including role assignment

Make sure they resemble the persona for which the solution is intended.

Interview planning ②

Interview candidates ✓	Interview team	Material
• Identify interview candidates that are similar to personas	• Size of the interview team	• Core equipment
• Determine the number of interviews required	• Role assignment	• Reference to the last interview
		• Supplementing materials

[1]

# Solution Interview: How to apply

3. Plan the interview guide in 4 phases:

- Warm-up: Create atmosphere that allows for uninhibited statements

- Introduction to the context: Define what context about the usage scenario should be given to the interviewees

- Experience the solution: Let the interviewee work out the solution by themselves; Ask them to "think aloud"

- Summary: Summarize the statements of the conversation partners in your own words and watch the reaction.

Interview guide ③

Agenda	Content
1. Warm-up (time span:) 2. Introduction to the context (time span:) 3. Experience the solution (time span:) 4. Summary (time span:)	• Discussion points • Specific questions • Form of presentation of the solution

[1]

Solution Interview

Tool for download

SOLUTION INTERVIEW
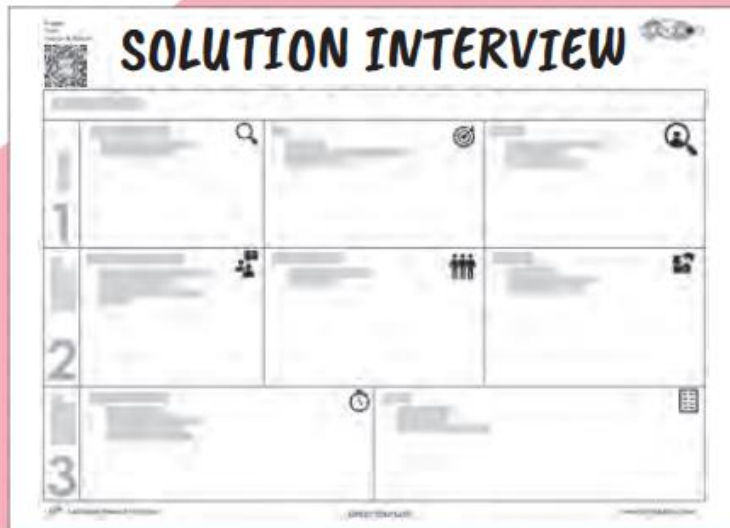
www.dt-toolbook.com/solution-interview-en

Key learnings

- Solution interviews are used to gain knowledge – not to sell something.
- Well-thought-out solution interviews lead to meaningful and compelling answers.
- Statements not only deliver insights but also observations.
- The result is the interpretation of the data, not the data itself.
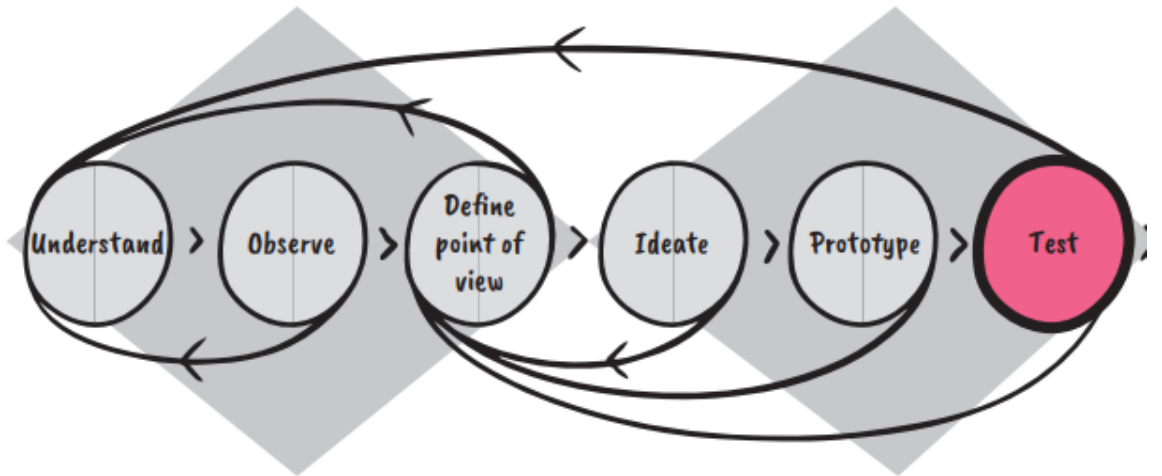
[1]

5) Structured Usability Testing

- Observe the interaction between user and prototype

- Check the correctness of the assumption, solutions

- Get new inputs for improvement

- Improve the suitability for use iteratively through testing
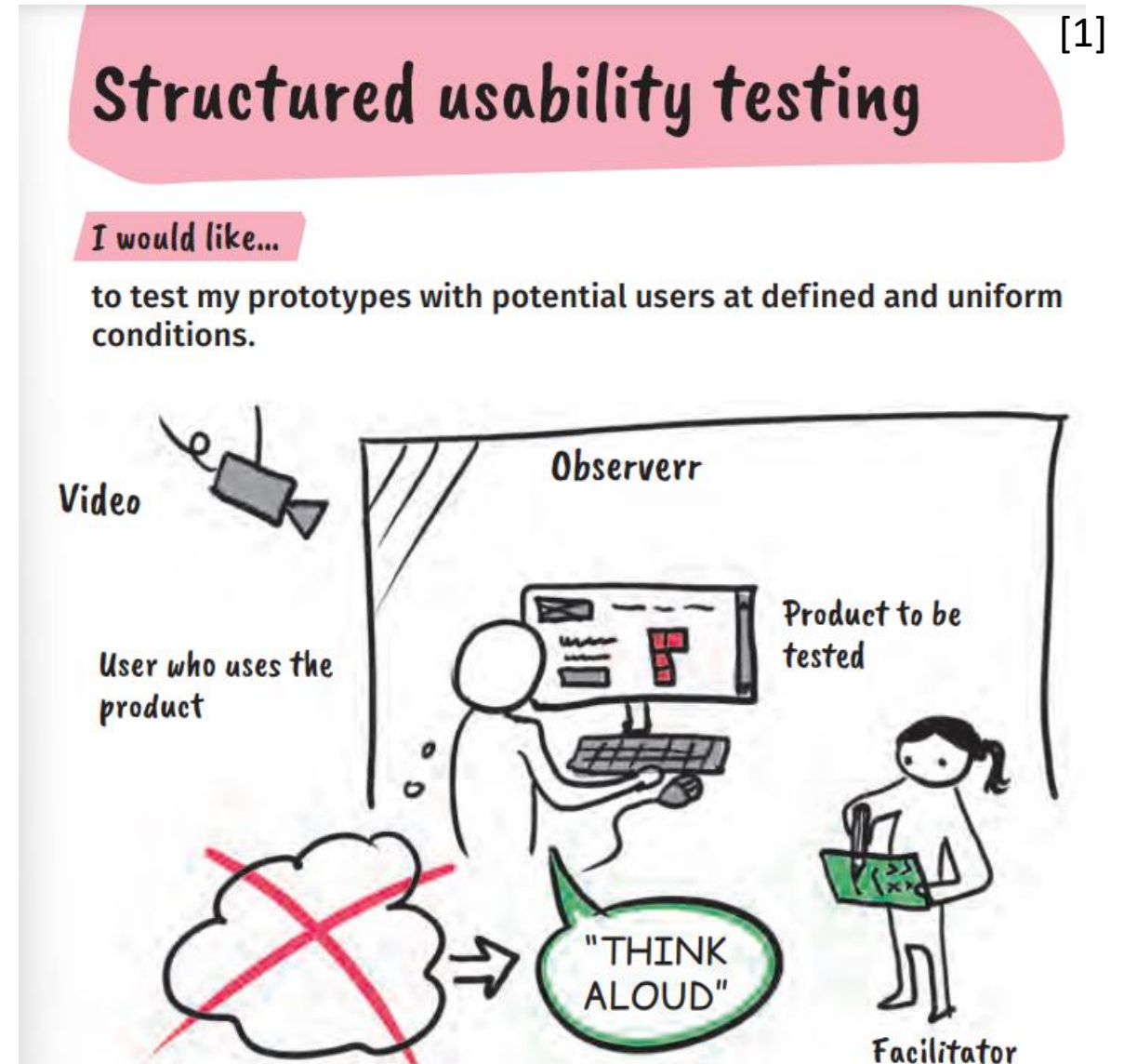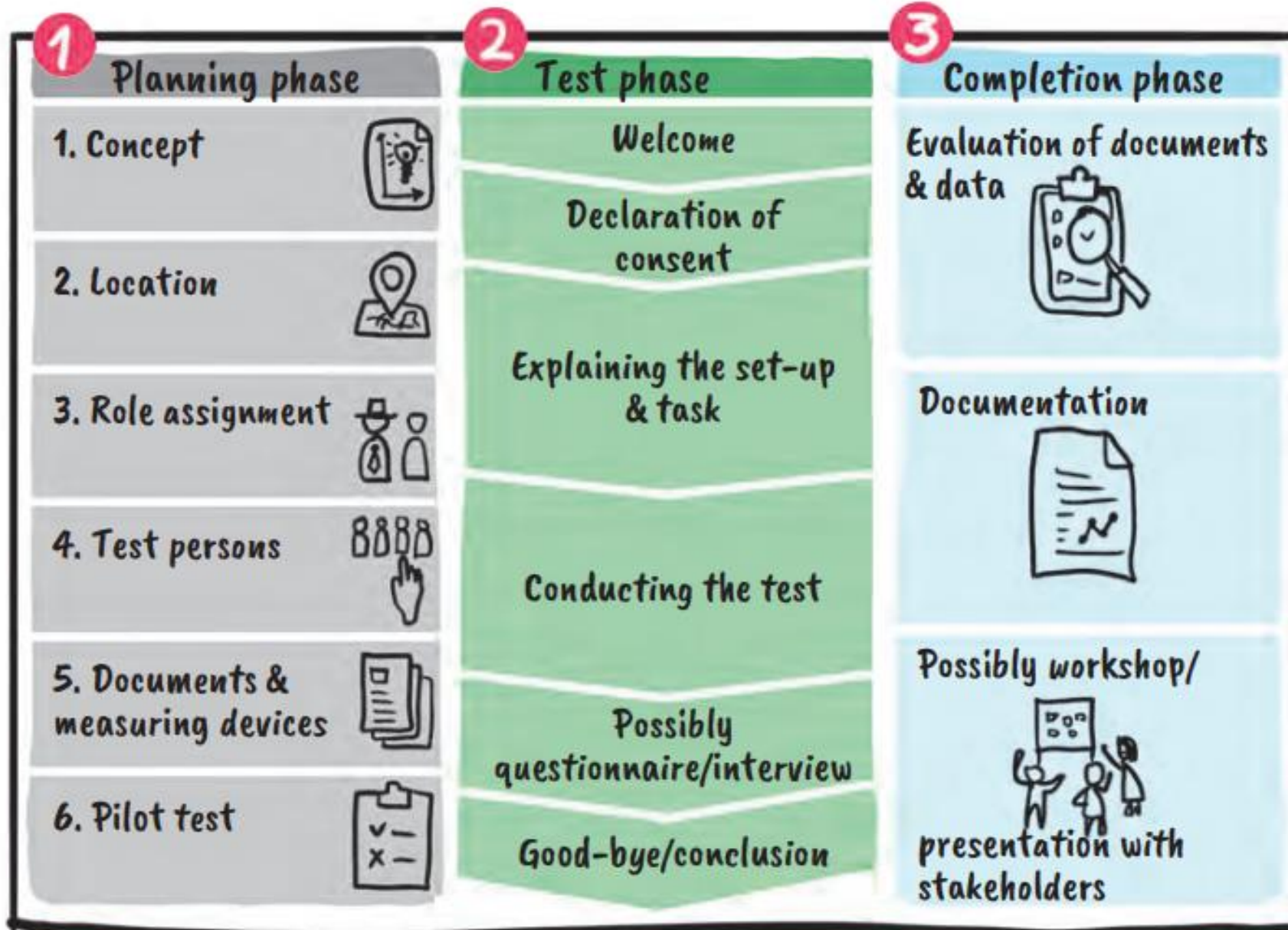
Structured Usability Testing : Information

- It can be checked whether it works by user.

- The test should be as specific, frequent and as early as possible and tested by real users.

- Anything – physical and digital product, that is operable can be tested.

- Aware what to be tested and how it is to be measured

- The uniform structure allows for testing and comparing several idea or variants on the basis of the same criteria.
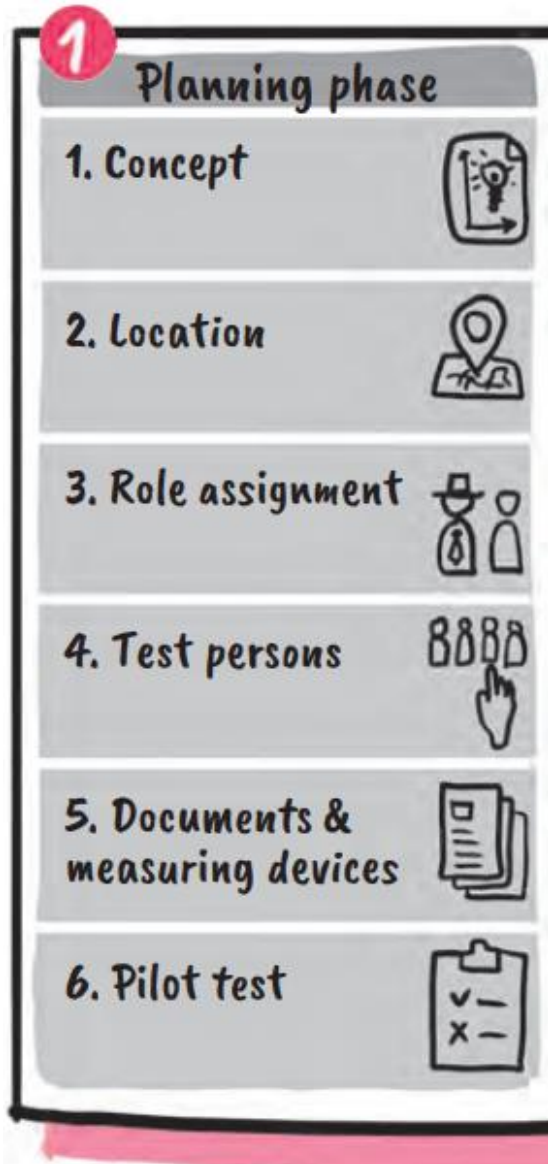

[1]

Template: Structured usability testing

① Planning phase
1. Concept
2. Location
3. Role assignment
4. Test persons
5. Documents & measuring devices
6. Pilot test

② Test phase
- Welcome
- Declaration of consent
- Explaining the set-up & task
- Conducting the test
- Possibly questionnaire/interview
- Good-bye/conclusion

③ Completion phase
- Evaluation of documents & data
- Documentation
- Possibly workshop/presentation with stakeholders

[1]

Planning phase

1. Concept
2. Location
3. Role assignment
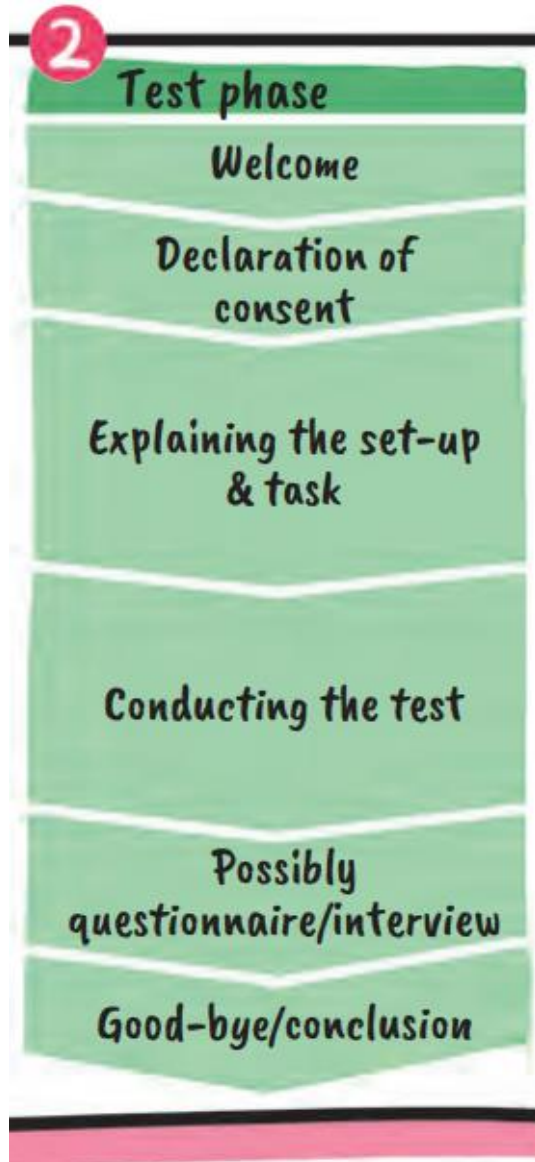4. Test persons
5. Documents & measuring devices
6. Pilot test

[1]

Structured Usability Testing : How to apply

1. Planning phase: Prepare the testing

- Describe what it is all about, what the object is, what is to be found out, which assumptions already exist
- Choose the location to define the role (moderator, observer, etc.)
- Define test person,
- Define the exact test scenarios (tasks)
- Prepare document to verify that everything works as it should

[1]

Structured Usability Testing : How to apply

2. Test phase: Conduct the actual test with the users

- Stick to the sequence and test scenarios
- Always provide all test persons with the same information
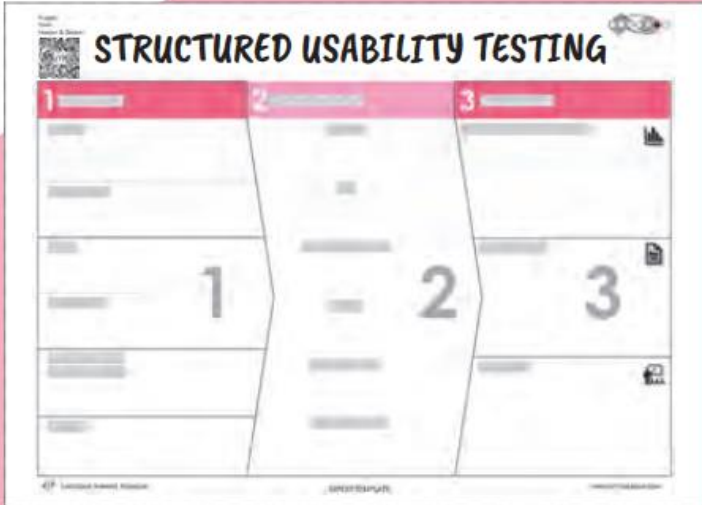
[1]

Structured Usability Testing : How to apply

3. Final phase: Evaluate the collected findings and document them

- If desired, present the results to the stakeholders.

- Use the result to continue improving usability.

Structured Usability Testing

www.dt-toolbook.com/usability-testing-en

Key learnings

- Set clear-cut goals for the usability test.
- Select test persons from the target group and urge them to "think aloud." The test persons should relate everything they think.
- Avoid asking any leading questions. It's better to run first tests early on with only a few subjects/users than later with many.

[1]

6) A/B Testing

- Perform a true A/B test or several variants of a prototype in form of a multi-variants test or as split testing

- Do a quantitative evaluation

- Carry out a quantitative survey and evaluate the number and content of feedbacks

- Compare individual variants of a function or a prototype (e.g. buttons, visuals, arrangement)

A/B Testing

I would like...

to review an assumption or compare two variants (in terms of quantity or quality) to find out what the preferences of the users/ customers are.

[1]

A/B Testing: Information

- It can be used as a stand-alone test or as an expansion of a prototype test.

- Used in testing two variants of a prototype simultaneously

- The test of prototype answers a question with different characteristics.

- Suit to advance prototype compared to a basic prototype

- Easy to give feedback when comparing two prototype than asking to comment on one prototype.

[1]

[1]
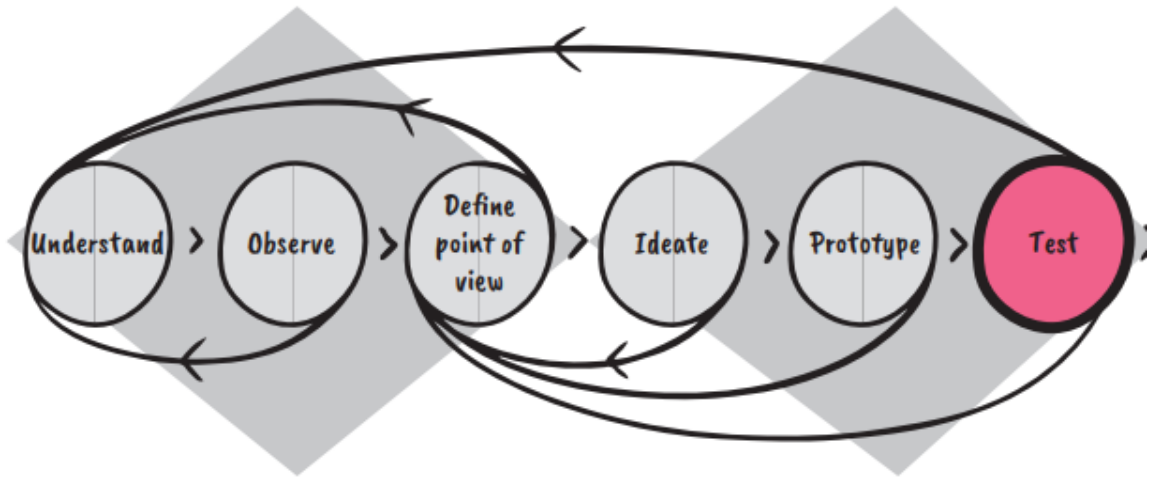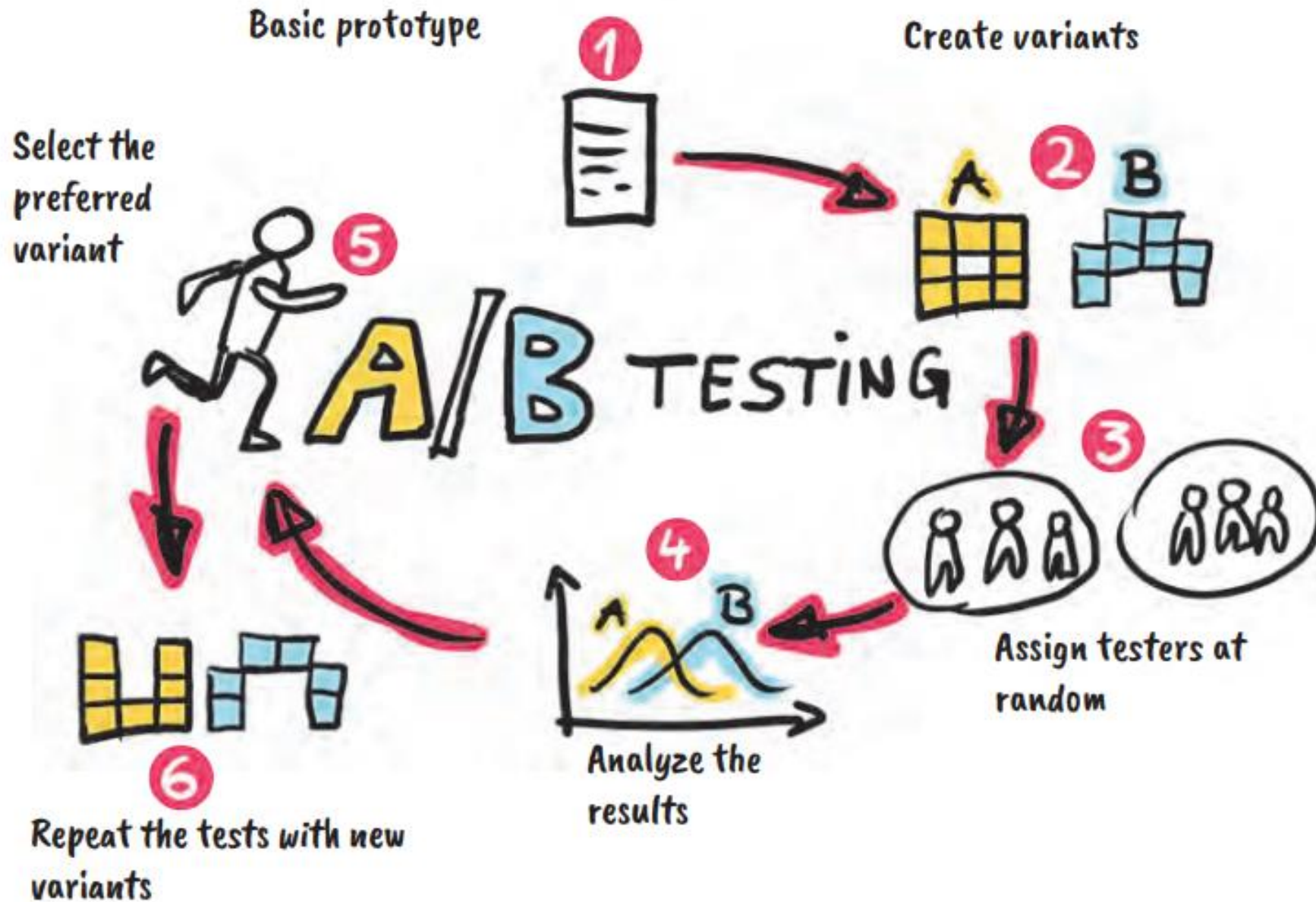
A/B testing is quick and easy. It must be decided at the beginning what is to be tested and how it is to be done:

- **Step 1:** Define the basic prototype and decide who is to be the test group (selection of the target group).
- **Step 2:** Consider variants of the prototype and make a decision for two of them to be compared with each other. Define key figures for what kind of testing is to be done (whether quantitative or qualitative test).
- **Step 3:** For quantitative tests, assign the users at random and conduct the test.
- **Step 4:** Evaluate the results.
- **Step 5:** Use the preferred variant for improving the prototype.
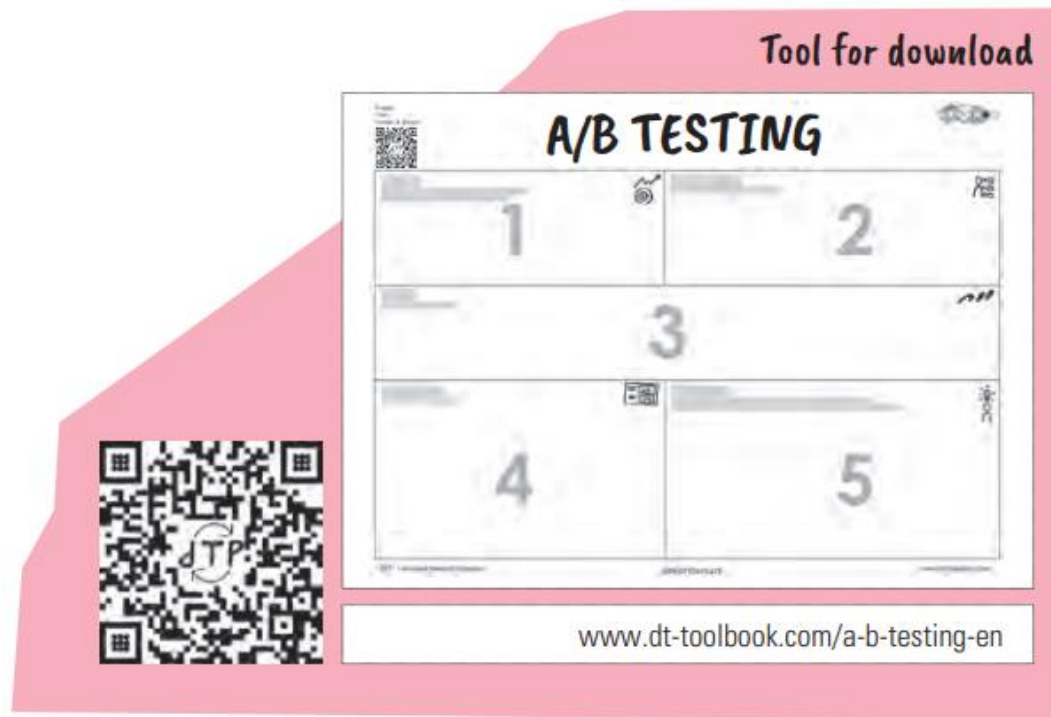- **Step 6:** Repeat the tests with new variants or perform another test for validation.

Note: Differentiation of the test procedure: Quantitative A/B test: The user group is divided (x% variant A, y% variant B). Qualitative A/B test: The variants are tested against one another (all users see variants A and B).
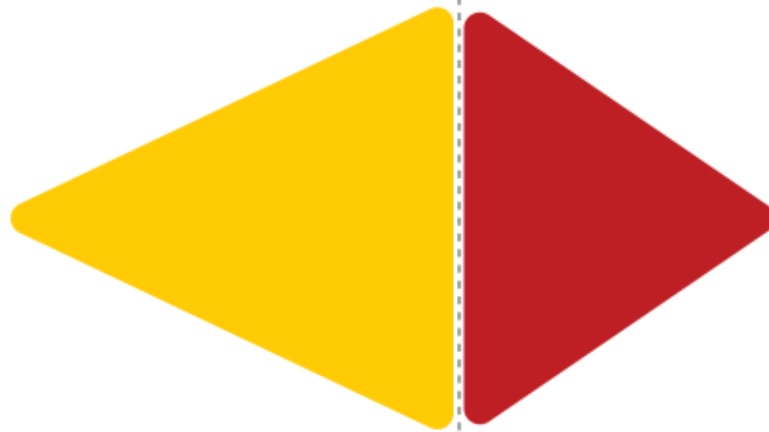

[1]

A/B Testing

Key learnings

- A/B testing does not mean testing two different ideas but two variants of a prototype.
- The test target groups should match the target persona.
- Make a decision on the setup prior to the test, that is, whether qualitative or quantitative feedback is needed.

[1]

UNDERSTAND — CREATE — DELIVER

Understanding ends in Insight | Creation ends in ideas | Delivery ends in reality

EMPATHY — DEFINE — IDEATE — PROTOTYPE — TEST

Source: http://designthinking.co.nz/design-thinking-for-execs/

[3]

Workshop 6:
Learning to
Test and Validate
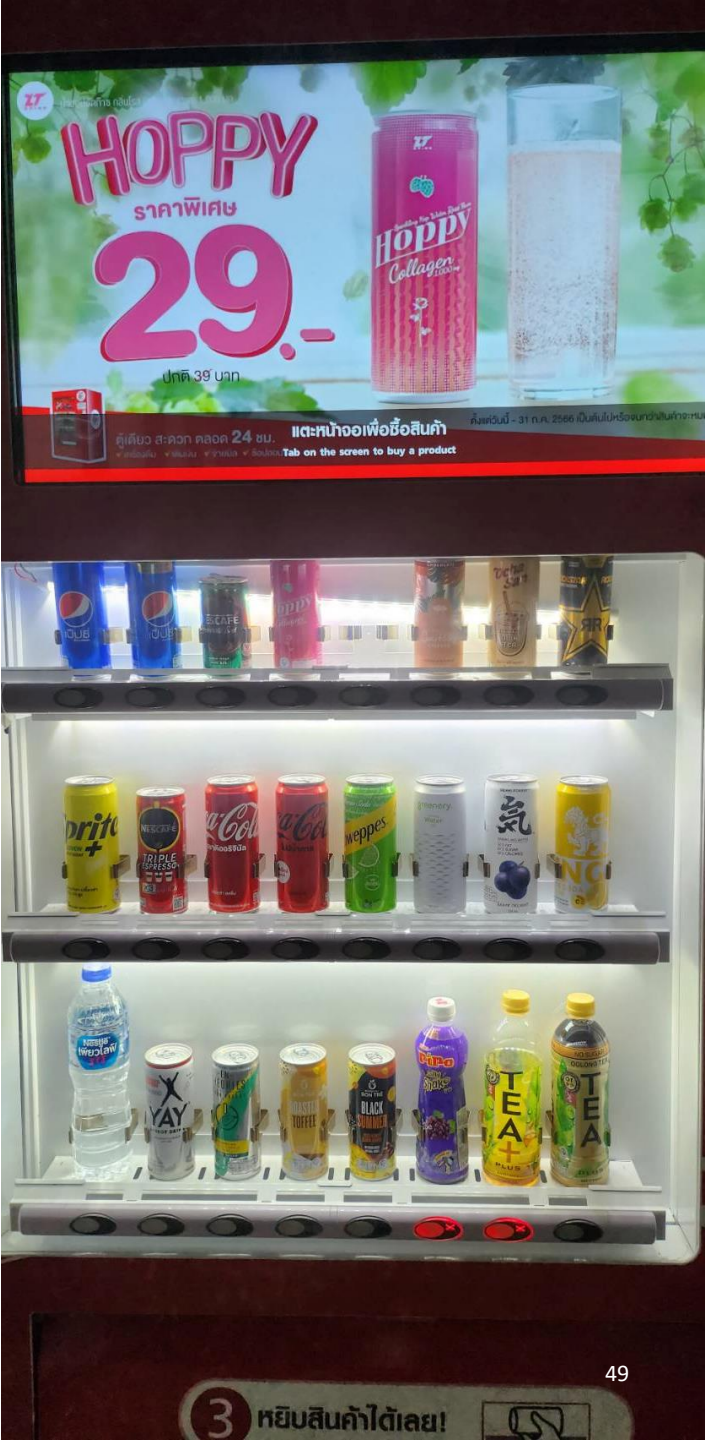
Credits & Reference Template

1. Testing Sheet: https://en.dt-toolbook.com/testing-sheet-en

2. Feedback Capture Grid: https://en.dt-toolbook.com/feedback-grid-en

3. Powerful Questions in Experience testing: https://en.dt-toolbook.com/experience-testing-en

4. Solution Interview: https://en.dt-toolbook.com/solution-interview-en

5. Structured Usability Testing: https://en.dt-toolbook.com/usability-testing-en

6. A/B Testing: https://en.dt-toolbook.com/a-b-testing-en

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2. M. Lewrick, J Thommen and L. Kefer "The Desing Thing Life Playbook Empower Yourself, Emrace Change and Visualize a Joyful Life" John Winley & Sons, Inc., Hoboken, New Jersy, Canada 2020

3. TCDC, "Design Thinking : Learning by Doing"