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USER-CENTRIC METHODS AND TOOLS

September 2025

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This booklet is a curated collection of techniques that can be used to enhance systems through a user-centered approach. It provides a select of tools and methods for evaluating and analyzing systems with a focus on users' needs and behaviors.

The booklet is divided into two sections. The first part covers evaluation and testing methods. These tools allow you to measure and refine user interactions, emphasizing usability and functionality. Each method encourages a hands-on, iterative approach, ensuring users remain at the core of system development.

The second section offers a select of techniques for analyzing and prioritizing findings. Once data is collected, these methods help uncover meaningful patterns and root causes, transforming insights into actionable strategies for improving the usability of systems. Together, these tools form a toolkit for addressing challenges in UI designs.

01

Evaluation & testing methods

Think Aloud Usability Test

+3

15+ minutes

Purpose

The purpose of a think out loud test is **to observe and understand users' thought processes as they interact with a system**. By verbalizing their thoughts, users reveal their motivations, hesitations, and confusion, allowing facilitators to identify areas for improvement and gain deeper insights into user experience.

Facilitation guide

- **Introduction:** Begin by explaining the purpose of the test and reassuring participants that you are evaluating the system, not them. Instruct participants to verbalize every thought, whether it is a question, assumption, prediction, or decision.
- **Task Execution:** Present participants with the prepared task scenarios one at a time, prompting them to think aloud as they complete each task.
- **Observe and Listen:** Pay attention to what participants are saying, look for expression of confusion or frustration. Note down observations.
- **Ask Guiding Questions**: Use open-ended questions to probe deeper into participants' thought processes. You can use the following guiding questions

  "*Why did you decide to go to that section?"*

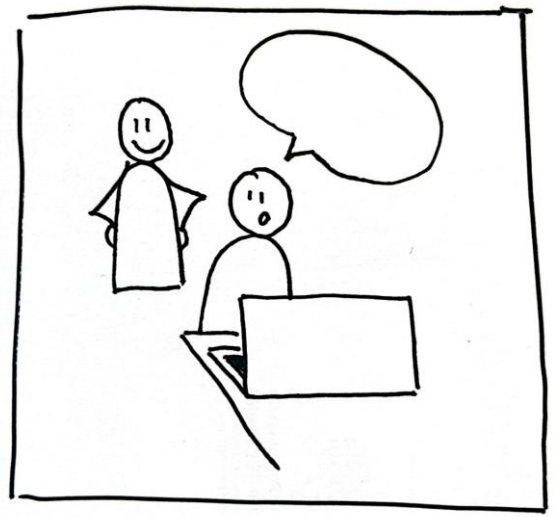
  "What is confusing about this step?"

  "What do you think will happen if you click that button?"

- **Follow-up and reflections:** After completing the tasks, engage participants in a brief reflection session to discuss their overall experience. Ask them what they found easy or difficult and any improvements they suggest.

Preparation/Materials

- **Recruitment**: Choose participants who represent your target users.
- **Test Objectives**: Define clear objectives. Know what aspects of the system you want to focus on (e.g., navigation, task completion, understanding specific features).
- **Task Scenarios:** Prepare realistic task scenarios that users are likely to perform. Tasks should be goal-oriented and vary in complexity.
- **Documentation**: Decide on how to document the test in order to use the insight for analysis and development. Consider using video/audio recording and/or notetaking.



For more information: Thinking Aloud: The #1 Usability Tool - NN/G

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Heuristic Evaluation

1-5 

30+ minutes

Purpose

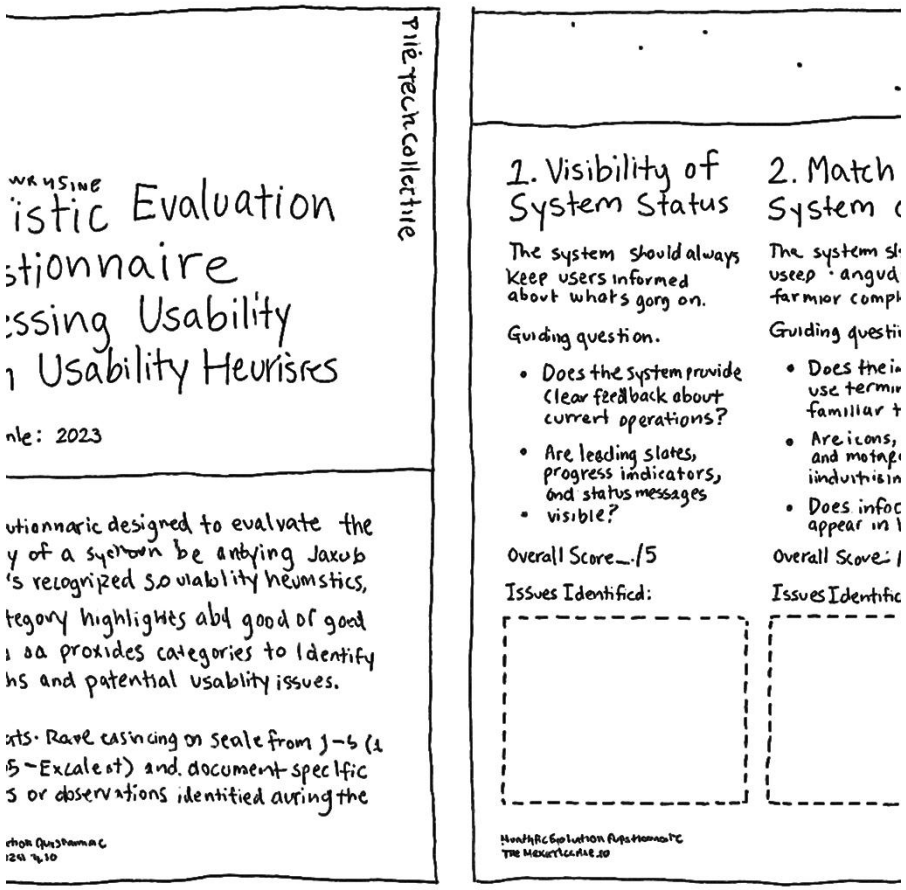
The purpose of a heuristic evaluation is to assess the usability of a system by identifying areas where it aligns or misaligns with recognized usability heuristics. The method is fast and inexpensive compared to other methods as it does not require involvement of real users, however it is important to note, that this method does not substitute for testing with real users.

Preparation/Materials

- **Recruit Evaluators**: For the best results assemble a team of evaluators, ideally consisting of usability experts and users familiar with the system. Aim for 3-5 evaluators to balance diversity and manageability.
- **Define Scope**: Clearly define the scope of the evaluation, including specific parts or features of the system to be assessed.
- **Use worksheet:** Prepare worksheet template or use the digital version found in Github.

Facilitation guide

- **Individual evaluation**: Ask evaluators to explore the system independently, examining it against each heuristic. Encourage them to note down their thought process behind the evaluation and scoring. Evaluators should note usability issues, describing what's wrong, why it violates the heuristic, and possibly suggest improvements.
- **Consolidation of findings**: Facilitate a group discussion to consolidate findings, identify patterns, and explore potential solutions. Aim for consensus on the most critical usability concerns. Here several methods like *Affinity Diagramming* can be profitably used depending on the need, number of evaluators and time.
- **Action Planning**: If time allows, move the discussion toward next steps or action items based on the insights gained.



For more information: Heuristic Evaluation: How-to Conduct | NN/G

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Heuristic Evaluation

1-5 30+ minutes

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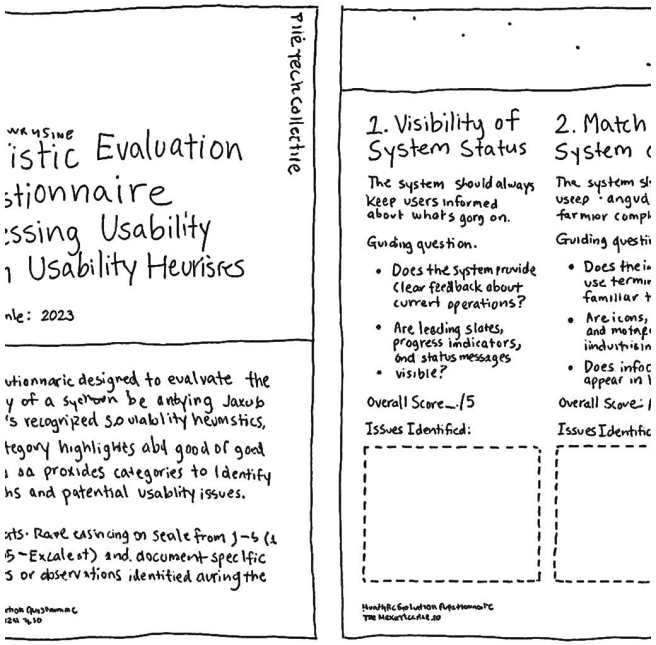

For more information: Heuristic Evaluations: How to Conduct - NN/G

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Open Card Sort

5-10

20+ minutes

Purpose

The purpose of a card sorting test is to gather insights into how users perceive and organize information. *Open Card Sort* allows participants to create their own categories and label them. This type of card sort is especially helpful at the beginning of a project when you're trying to get insight into how people categorize and label information.

Facilitation guide

- **Introduction:** Begin by explaining the purpose of the test and reassuring participants that you are evaluating the system and its organization, not them.
- **Instructions**: For an *Open Card Sort*, instruct participants to categorize the cards in a way that makes sense to them. Encourage them to create and label categories as they see fit.
- **Task Execution**: Allow participants time to complete the sorting task. First grouping the cards, thereafter, labelling the groups.
- **Facilitate the Process**: Encourage participants to verbalize their reasoning behind card placement and category creation. Observe their choices and category creation process, noting any moments of hesitation or confusion. You can use the following guiding questions:

  "Can you explain how you're starting to group these items?"

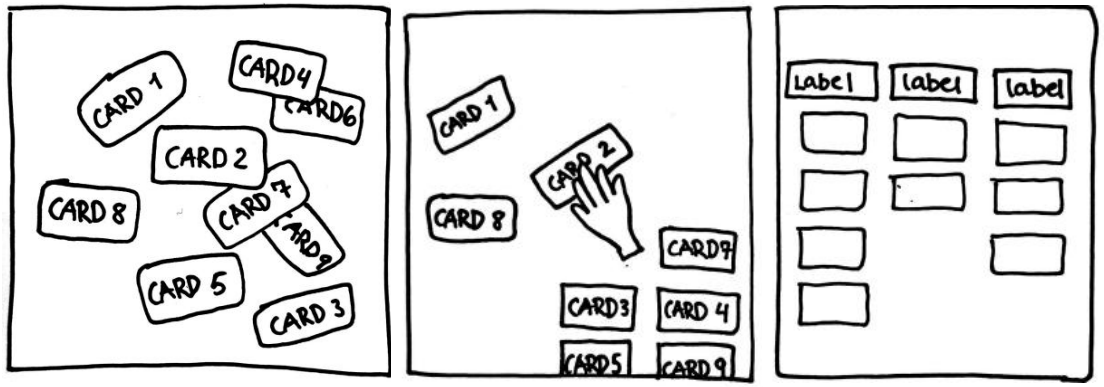
  "What criteria are you using to create these categories?"

  "I noticed you paused here; what were you considering?"

- **Follow-up and reflections:** After completing the tasks, engage participants in a brief reflection session to discuss their overall experience.

Materials

- **Recruitment**: Choose participants who represent your target users.
- **Content Selection**: Identify and list all relevant content items or concepts you want to test. Ensure the set is comprehensive but manageable.
- **Card Creation**: Prepare physical or digital cards. Each card should represent a single content item or concept. Be aware to label the cards in a clear and understandable way.
- **Documentation**: Decide on how to document the test in order to use the insight for analysis and development. Consider using methods like video/audio recording and/or notetaking.



For more information: Card Sorting

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Closed Card Sort

5-10

20+ minutes

Purpose

The purpose of a card sorting test is to gather insights into how users perceive and organize information. *Closed Card Sort* requires participants to sort cards into pre-defined categories. It is typically used later in development project or in redesign projects to validate if category labels make sense to users.

Facilitation guide

- **Introduction:** Begin by explaining the purpose of the test and reassuring participants that you are evaluating the system and its organization, not them.
- **Instructions**: For a *Closed Card Sort*, explain the predefined categories and guide participants to organize cards accordingly.
- **Task Execution**: Allow participants time to complete the sorting task. Sorting the cards into the predefined categories.
- **Facilitate the Process**: Encourage participants to verbalize their reasoning behind card placement and category creation. Observe their choices and category creation process, noting any moments of hesitation or confusion. Pay close attention to what participants are saying, looking for expressions of confusion or frustration. You can use the following guiding questions:

  “Can you explain how you're starting to group these items?"

  “What made you choose these labels?“

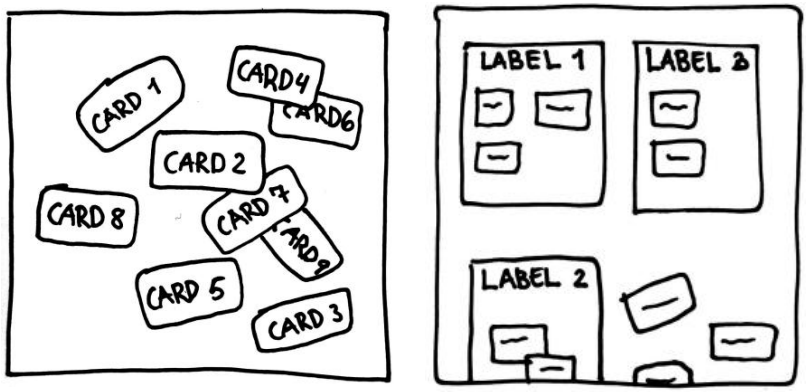
  “I noticed you paused here; what were you considering?“

- **Follow-up and reflections:** After completing the tasks, engage participants in a brief reflection session to discuss their overall experience.

For more information: Card Sorting

Materials

- **Recruitment**: Choose participants who represent your target users.
- **Content Selection**: Identify and list all relevant content items or concepts you want to test. Ensure the set is comprehensive but manageable.
- **Card- and category creation**: Prepare physical or digital cards. Each card should represent a single content item or concept. Be aware to label the cards in a clear and understandable way. Make preliminary categories and labels, for the participants to use when labelling the sorted cards.
- **Documentation**: Decide on how to document the test in order to use the insight for analysis and development. Consider using methods like video/audio recording and/or notetaking.



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Hybrid Card Sort

5-10

20+ minutes

Purpose

The *Hybrid card sort* is similar to closed card sort, except users can also create new categories. It is often used on redesign projects, as it allows the researcher to see how participants engage with existing information architecture while leaving space to explore additional categories that might make sense as part of an update.

Facilitation guide

- **Introduction:** Begin by explaining the purpose of the test and reassuring participants that you are evaluating the system and its organization, not them.
- **Instructions**: For a *Hybrid Card Sort*, explain the predefined categories and guide participants to organize cards accordingly while leaving space to explore additional categories that might make sense as part of an update.
- **Task Execution**: Allow participants time to complete the sorting task. First grouping the cards, thereafter, labelling the groups, and creating additional labels.
- **Facilitate the Process**: Encourage participants to verbalize their reasoning behind card placement and category creation. Observe their choices and category creation process, noting any moments of hesitation or confusion. You can use the following guiding questions:

  “Can you explain how you're starting to group these items?"

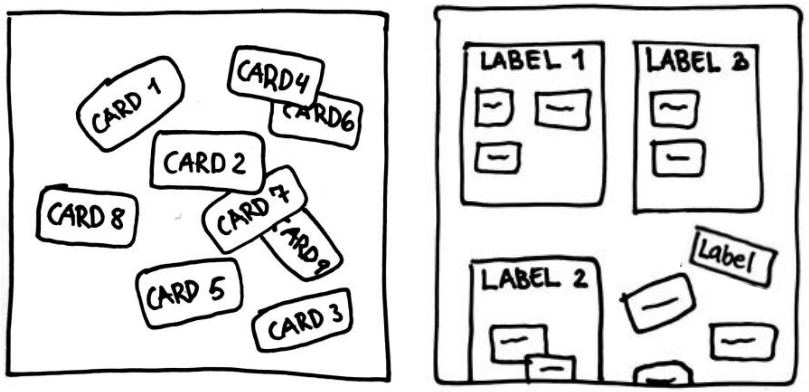
  “What made you choose these labels?“

  “I noticed you paused here; what were you considering?“

Follow-up and reflections: After completing the tasks, engage participants in a brief reflection session to discuss their overall experience.

Materials

- **Recruitment**: Choose participants who represent your target users.
- **Content Selection**: Identify and list all relevant content items or concepts you want to test. Ensure the set is comprehensive but manageable.
- **Card Creation and category**: Prepare physical or digital cards. Each card should represent a single content item or concept. Be aware to label the cards in a clear and understandable way. Make preliminary categories and labels, for the participants to use when labelling the sorted cards.
- **Documentation**: Decide on how to document the test in order to use the insight for analysis and development. Consider using methods like video/audio recording and/or notetaking.



For more information: Card Sorting

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A/B testing (split test)

+10  60+ minutes

Purpose

The purpose of A/B testing is to evaluate differences in user experience and performance between two versions of a design by directly comparing them with target users. This helps to make informed decisions based on empirical data related to a hypothesis to be tested.

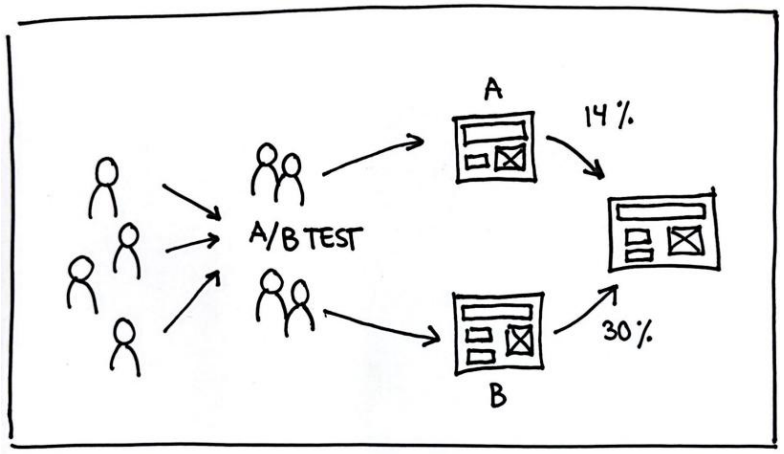
*Note that A/B testing requires careful planning and a more extensive setup. This includes ensuring a statistically significant sample size, and using robust analytics tools to track user interactions, measure and analyze outcome.

Facilitation guide

- **Preparation:** Before conducting the A/B test, ensure both versions are ready and operational, and that the tracking system is properly configured.
- **Launch the test and run the test:** Deploy both versions to your target audience simultaneously and monitor the distribution to ensure an even split between versions A and B. Make sure to collect data on user interactions with both versions. Ensure the test runs until you reach a sufficient sample size to achieve statistical significance.
- **Analyze Results**: Analyze the collected data to determine how each version performs against your defined metric. Here you should use statistical methods to verify the significance of the observed differences.
- **Decision Making based on the results:** Based on the results, decide whether to implement the winning version, iterate with new variants, or conduct further testing.

Preparation/Materials

- **Recruitment**: Choose participants who represent your target users. Use a method or tool to randomly assign users to Version A or B to ensure the reliability of the results.
- **Test objectives, hypothesis and metrics**: Define clear objectives. Know what aspects of the system you want to focus on (e.g., navigation, task completion, understanding specific features).formulate a hypothesis to test. Decide on the key metrics that will indicate success. Set up an analytics tool for data collection to track user interactions with each version.
- **Design variations:** Create two distinct versions of the page or feature: Version A (the control) and Version B (the variation). Ensure that the variations are consistent with your test objective, keeping changes limited and focused for clear attribution..



For more information: A/B Testing 101 - NN/G

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Rapid Prototyping

+3 25+ minutes

Purpose

The purpose of rapid prototyping in UX design, is to fail fast, by quickly creating and validating scaled-down versions of a product, to test its functionality and design. This can be useful when brainstorming or investigating different solution proposals, and can help identifying usability issues, validate design directions, and inform iterative improvements based on real user feedback.

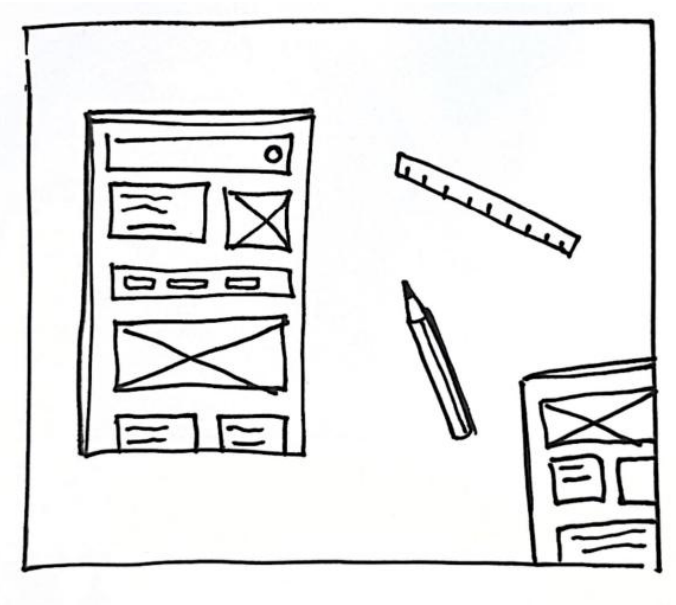
Facilitation guide

Rapid prototyping builds on the 3 stages of Build Measure Learn.

- **Introduction**: Start with a brief overview of the purpose and goals of the rapid prototyping session. Explain that the prototype is a preliminary version designed to gather feedback and not a finished product.
- **Prototype Creation**: Collaborate with your team to create the prototype, focusing on the key features and interactions that need testing.
  In early stage of feature/product development, we can learn a lot, from very little, when focusing on e.g., overall layouts, combinations or structures, to solve the problem. Later stages usually entails high fidelity (interactive) prototypes, with a lot of details, that can highlight usability issues with the interactions
- **Review and test:** Share the prototypes with users, stakeholders and/or team members and measure feedback. Present the prototype to the users and set the context without leading them into specific interactions. Encourage them to interact with the prototype naturally, simulating real-life usage.
- **Refine:** Learn from the feedback and refine the prototype. A good refinement step is to increase the fidelity and repeat with a new prototyping session.

Preparation/Materials

- **Define Objectives**: Clearly articulate what aspects of the system you want to explore with the prototype. Is it the navigation you want to test ? Or is it the clarity and readability of a graph?!
- **Gather Materials**: Decide on whether the format should be digital or analogue
  - **Analog:** Can be blank paper and printed materials, such as, screenshots and inspirational sets of icons/components.
  - **Digital:** Figma project or a Gen-AI tool.



For more information: What is Rapid Prototyping in UX Design? — updated 2025 | IxDF

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System Usability Scale (SUS)

+1 

15+ minutes

Purpose

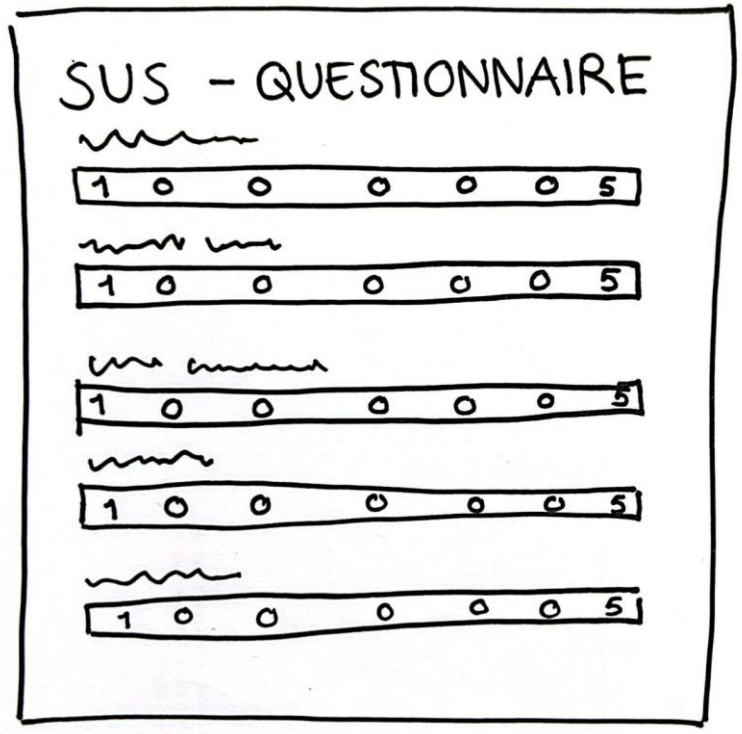
The purpose of using the System Usability Scale is to quantify user perceptions of a system's usability through a standardized questionnaire. The SUS is a post-test instrument, given to a participant after an entire usability testing session is over. The questionnaire contains 10 different questions that address the usability and learnability of a system. It's a validated and reliable way of measuring usability, in an opinionated Likert-scale format.

Facilitation guide

- **Introduction**: After a usability testing session. Explain that the SUS questionnaire will measure their overall perception of the system's usability.
- **Collect Responses**: Provide the SUS questionnaire to participants and make them fill it out. Gather completed questionnaires, ensuring all questions are answered. Use digital tools if collecting electronically for ease of data processing.
- **Analyze Results**: Calculate SUS scores to quantify the system's usability. To calculate the **SUS score** for each respondent: (for odd-numbered statements) subtract 1 from the user's response; (for even-numbered statements) subtract the response from 5. The scale ranges from 0 to 100, with higher scores indicating better perceived usability. For your site's usability to be in the top 10% of all sites, you would need a score of 80 or higher, whereas a score of 73 would place you only in the top 30%.
- **Discuss Findings** (optional): Facilitate a discussion or debriefing session to explore qualitative feedback related to the scores.

Materials/Preparation

- **Materials**: A digital version of the survey or a printout of the questionnaire and a pen.



System Usability Scale for Data-Driven UX | IxDF

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02

Analysis & prioritization methods

5x Why

5-10

30+ minutes

Purpose

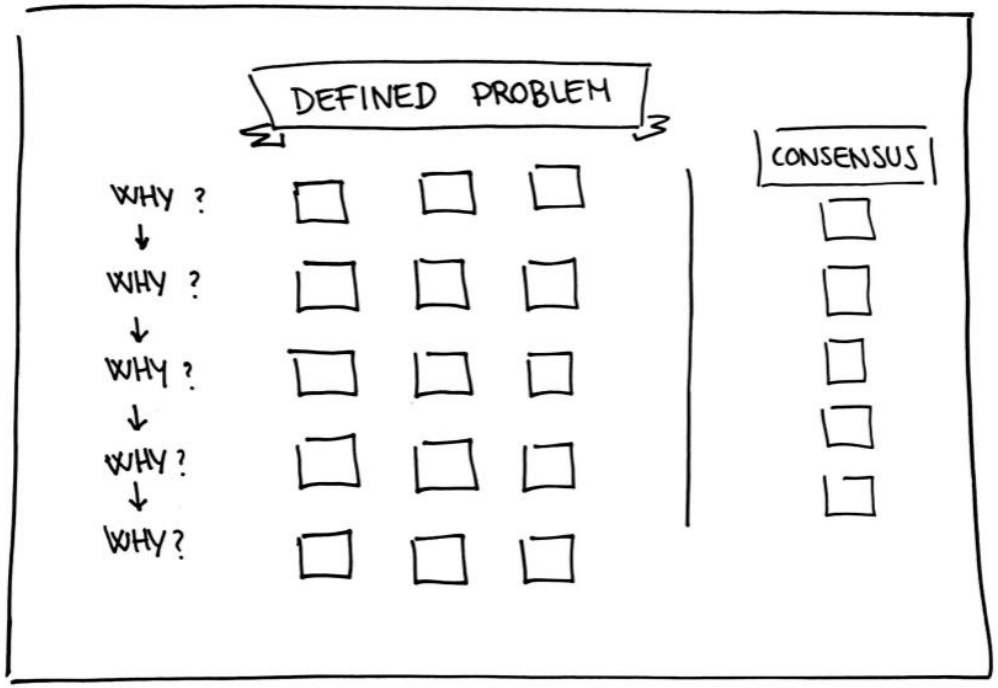
The purpose of the 5 Whys method is to explore the cause-and-effect relationships underlying a problem. The technique helps uncover the root cause to an identified problem, leading to more effective solutions and improvements

Materials

Prioritize conducting the method physically using tools like whiteboards or flip charts for visual mapping. Prepare writing utensils and sticky notes. For remote conduction of the method, digital collaboration platforms like Miro or Canva can be useful.

Facilitation guide

- **Set the scene:** Write the problem in an area visible to all the group members, and if you'd like, draw something that represents it. Distribute sticky notes to each player and ask them to number five of them 1 through 5.
- **First Why**: Ask participants to consider why the problem exists and write their answer on sticky note 1. Encourage them to write the first thing that comes to mind.
- **Subsequent Whys**: For each preceding answer, ask participants to explore why that is the case, recording each subsequent why on the next numbered sticky note.
- **Review and Discuss**: Create a space on the wall for each participant to post their sticky notes in a vertical column, starting with note 1 at the top and ending with note 5 at the bottom. Once all notes are posted, identify common patterns and differences.
- **Consensus Building**: Rewrite the initial problem statement on a flip-chart paper. Choose a volunteer to collect the most insightful whys from each column into a single column. Discuss as a group to reach consensus on which answers best capture the root cause.
- **Action Planning**: If time allows, move the discussion toward next steps or action items based on the insights gained.



For more information: The 5 Whys – Gamestorming

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Affinity diagramming

5-10

30+ minutes

Purpose

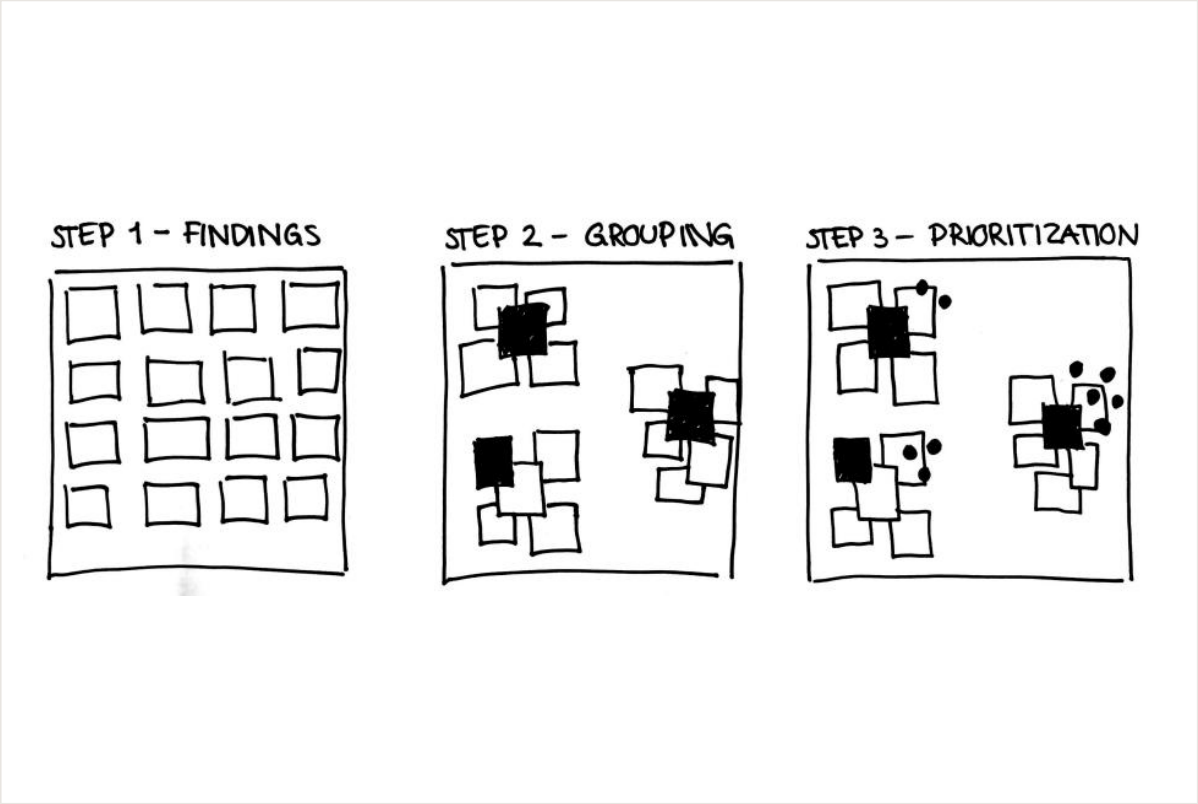
The purpose of affinity diagramming is to help teams synthesize usability testing findings and insights by organizing them into themes or categories. This method enables the team to visually group information and identify patterns, guiding the process towards turning the findings into actionable improvements.

Materials

Prioritize conducting the method physically using sticky notes, markers and whiteboard. For remote conduction of the method, digital collaboration platforms like Miro or Canva can be useful.

Facilitation guide

- Data and preparation: Compile all findings from usability tests. Assemble a diverse group familiar with findings.
- **Step 1 - Write down findings**: Instruct team to write one observation or finding per sticky note. This can include user quotes, behavior patterns, and any significant issues observed.
- **Step 2 - Grouping and labelling:** After all sticky notes are posted, the team sorts them into groups. Take a step back and get a view of the big picture and themes emerging. Begin to group the sticky notes according to apparent themes or categories. Once groups naturally form, create labels or headings for each cluster that best summarize the underlying theme. Discuss patterns and relationships identified among the clusters and consider their implications.
- **Step 3 – Prioritization:** Once each theme is identified, direct the team on where to focus next by prioritizing the most important items and themes, and discuss next steps based on the categorized themes. Delegate follow-up tasks to relevant team members, ensuring clear ownership of action items.



For more information: Affinity Diagramming: Collaboratively Sort UX Findings & Design Ideas - NN/G

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Thematic analysis

+2

60+ minutes

Purpose

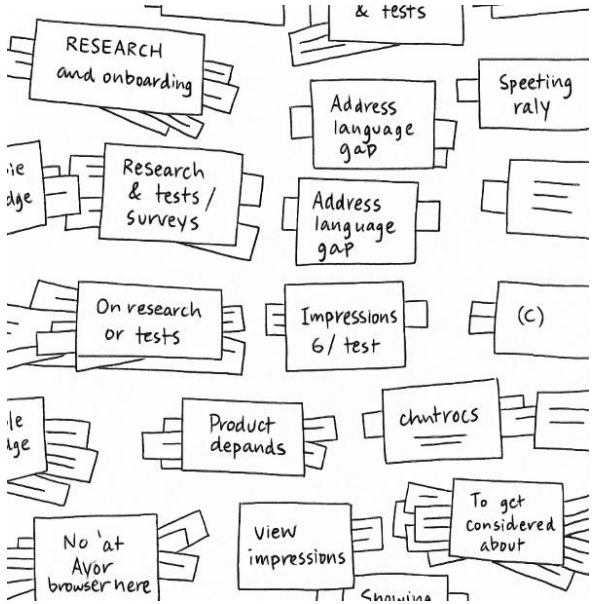
The purpose of thematic analysis is to systematically derive themes from qualitative data, such as user interviews, surveys, or observational notes. This method helps transform raw data into meaningful patterns that inform design and decision-making. The thematic analysis should be approached as an iterative process, allowing themes to evolve through constant reflection and refinement.

Facilitation guide

- **Generate Initial Codes:** Start coding the data by highlighting interesting or significant data segments. Try to capture all potential meanings without interpreting too much at this stage. Assign codes to significant categories that represent data features relevant to your research questions.
- **Search for Themes**: Evaluate the initial codes and collate them into broader themes. Look for connections and hierarchies that indicate how codes can combine into meaningful themes.
- **Review Themes:** Reflect on the identified themes, considering their relevance and relationship to the data and research questions. Refine themes to ensure coherence and clarity. Eliminate themes that don't contribute insights and split those that are too complex into sub-themes.
- **Name Themes:** Spend time one developing detailed descriptions for each theme, summarizing the essence of the theme and its impact on the research topic. Create concise names that convey the theme's core.
- **Summarize the main findings:** Summarize the main findings from the analysis and use the insights to further inform the design process.

Preparation/Materials

- **Ensure documented data:** Gather your qualitative data. Ensure it is documented like transcripts or detailed notes. Ensure all team members are familiar with the content of the data.
- **Define research question:** Articulate a clear objective and research question to guide the analysis and ensure a focus on the key issues.
- **Materials**: use highlighters or a digital annotation tool for the coding of the qualitative data. Decide on what tool to use for organizing and categorizing the themes.



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Impact/Effort Mapping

+3

15+ minutes

Purpose

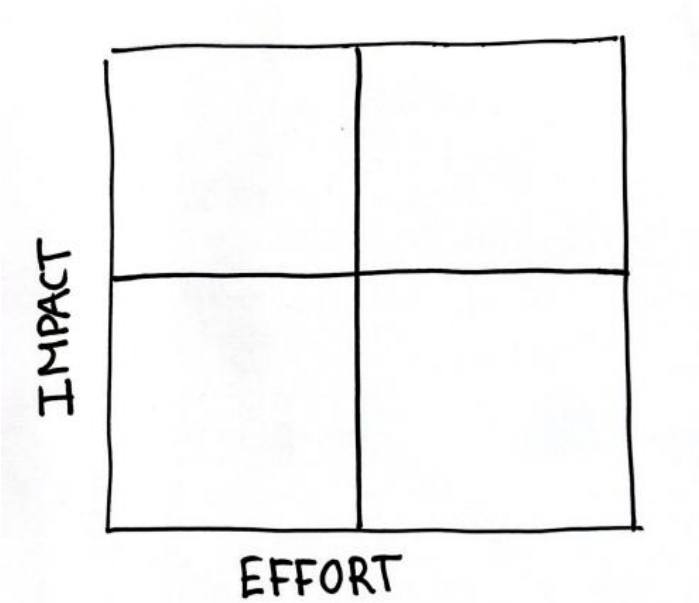
The purpose of using an Impact/Effort Matrix is to prioritize tasks or projects by evaluating their relative impact and the effort needed to complete them. The tool helps teams evaluate and rank initiatives, projects, or ideas based on two key dimensions: the potential impact they will have, and the effort required to implement them. This visual framework enables decision-makers to quickly identify "quick wins" (high impact, low effort) and avoid "time wasters" (low impact, high effort).

Facilitation guide

- **Introduction**: Introduce the concept of the Impact/Effort Matrix and explain its purpose in prioritizing tasks effectively.
- **Create the matrix:** Draw a large 2x2 grid with "Impact" (low to high) on the vertical axis and "Effort" (low to high) on the horizontal axis. Label the four quadrants as "Quick Wins" (high impact/low effort), "Major Projects" (high impact/high effort), "Fill-ins" (low impact/low effort), and "Thankless Tasks" (low impact/high effort).
- **Facilitate placement discussions**: For each item, ask the group to discuss and agree on its relative impact and effort levels. Encourage specific examples and evidence to support placements rather than gut feelings. Place each item in the appropriate quadrant based on group consensus. If there's disagreement, facilitate a brief discussion to reach alignment or note areas of uncertainty.
- **Prioritize and plan**: Focus attention on the "Quick Wins" quadrant for immediate action items, discuss resource requirements for "Major Projects," and consider eliminating or delaying items in the "Thankless Tasks" quadrant.

Materials

- **Define Objectives**: Determine the scope of tasks or projects you want to prioritize. Ensure a clear understanding of your goals and desired outcomes. The items that need prioritization can be the result of a workshop or a pre-defined list.
- **Materials:** Create a 2x2 grid (Impact on Y-axis, Effort on X-axis), either in a digital tool, like Miro, or in the physical space, like a large whiteboard, flip chart or a wall, with Post-Its and pens.



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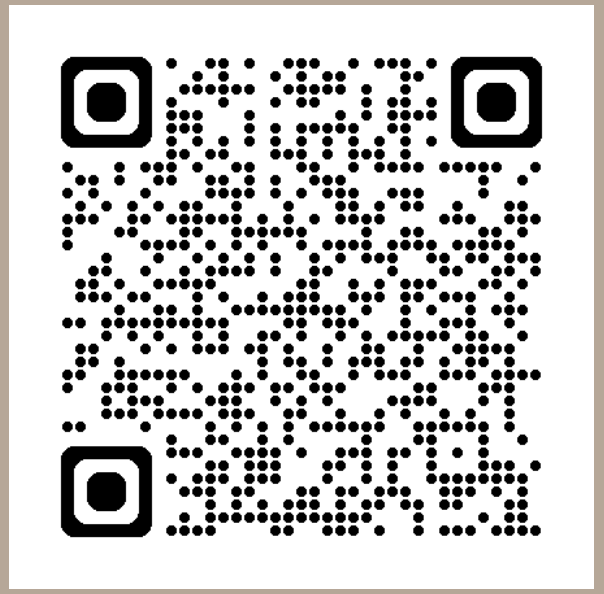

For easier use and reference after this course,
all resources and links have been aggregated in a
Github Repository

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