In-class Assignments for Students Collaborating with External Partners

The goal of these assignments is to put in practice the knowledge the students have gained through the e-modules and to make progress in their group project in collaboration with external partners.

Module Impact-driven Education: A Partnership Between University and Society

This module is recommended to be sent prior to the first session of the course to provide context for the students. Considering the multiple introductory activities that can happen in the first session of a course, there might not be time for a specific in-class assignment about this e-module. A simple suggestion is to ask students if they would like to share some of their answers to the **personal reflection** proposed in the e-module. This can be done in small groups or a in a plenary.

Module Involving Multiple Stakeholders to Address Societal Challenges

WORK IN GROUPS
Step 1 (Brainstorm). List as many stakeholders (minimum of 4) as you think are involved in the issue your group is addressing. Think outside the box and don't limit your ideas *(10 min)*.

Step 2 (Round Table). Each person in the group will act as a legal representative for a stakeholder and present their interests. As a group, you need to resolve the issue at hand. Let's start by understanding how each stakeholder views the issue.

- Think about what your stakeholder would say in this situation *(5 min).*
- Afterwards, discuss the problem as a group in a roundtable format, ensuring that each stakeholder's opinion is heard *(15 min).*

PLENARY
Step 3 (Discuss). Share what you learned during this experience with the rest of the groups *(10 min).*

Module Reciprocal Collaboration and Professional Communication with Stakeholders

WORK IN GROUPS:
Step 1 (Create). Create a communication plan for your meeting with stakeholders using the following questions as guidelines:

- **Means of communication.** How will you communicate your message?
- **Key information.** What is the key information you need to get from your partner?

- **Cultural sensitivity and language barrier.** How will you make sure to be respectful and sensitive to your partner's organizational and/or personal culture? If there is one, how will you tackle the language barrier?
- **Roles.** What roles will each of you take to optimize communication and take advantage of your individual strengths?
- **Do's and don'ts**. Create a list of do's and don'ts for communicating effectively with your societal partner that make sense for you as a group.

PLENARY
Step 2 (Share). Share your do's and don'ts with the rest of the groups *(10 min).*

Module Ethical Values and Considerations When Collaborating with Stakeholders

In the module about ethics when collaborating with stakeholders you learned about five key ethical considerations.

WORK IN GROUP
Step 1 (Review). Go back to the module to review the five ethical considerations, namely respect, transparency, consent, fairness, and accountability (*5 min*).

Step 2 (Evaluate). Reflect as a group on how you integrate these considerations into your relationship with your social partner. Use the self-assessment table on Canvas to evaluate the group's performance on each consideration *(25 min)*.

Step 3 (Decide). Based on this assessment, determine the necessary steps to take this considerations into account in your project *(15 min)*.

Module Using Design Thinking as a Tool for Creating Solutions with Stakeholders

Design thinking emphasizes "learning by doing". To this end, prototyping your proposed solution is a critical step that can go beyond discussions and help identify blind spots and gain insight into how to improve it.

Below is a list of 7 common methods for creating prototypes. See the explanation of these prototyping methods on *Appendix 1. Methods for prototyping.*

1. Sketching
2. Paper prototyping
3. Digital prototyping
4. Physical prototyping
5. Role playing
6. Storyboarding
7. User-driven prototyping

WORK IN GROUPS
Step 1 (Decide). Choose one of the prototyping methods from the list above that you believe is the most appropriate for the proposed solution (15 min).

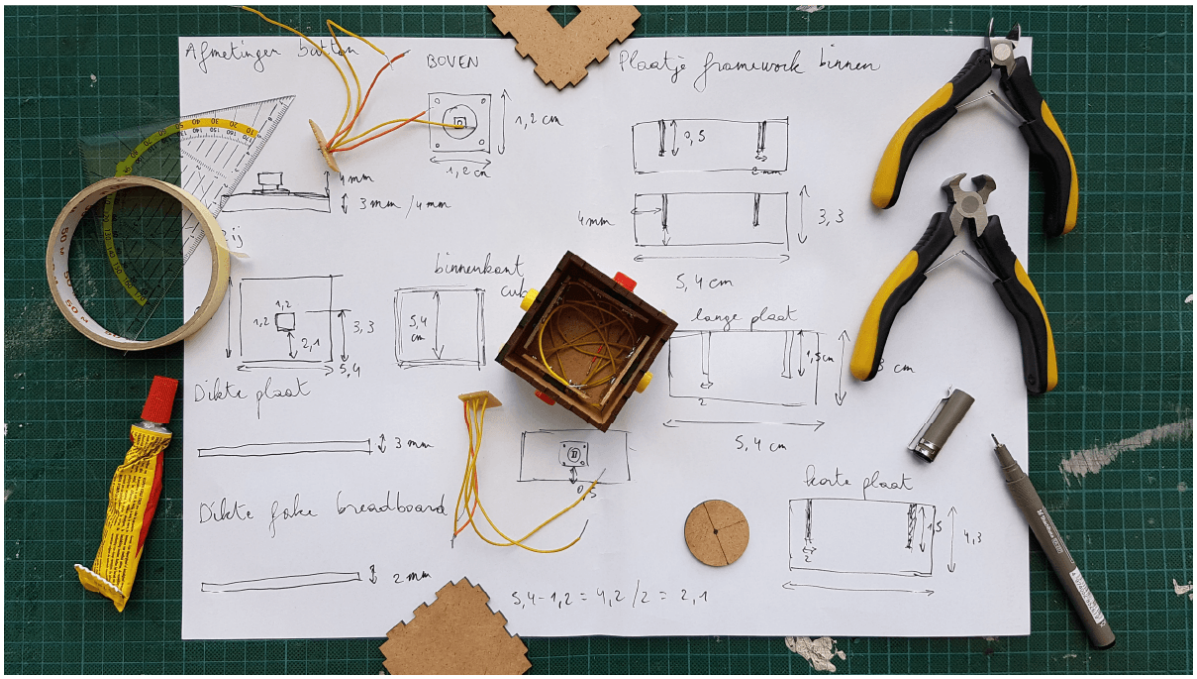
PLENARY
Step 2 (Share). Share shortly with the group why you think this particular prototyping method will effectively meet the needs of your proposed solution and connect with your target audience.

Appendix 1. Methods for Prototyping[1]

SKETCHING

Sketching involves creating rough, hand-drawn illustrations or diagrams to visualize the concept of your solution. Even the messiest sketches can be valuable as low-fidelity prototypes. Sketching diagrams, mind-maps, or the structure of your ideas can help others grasp a well-rounded understanding of your intended outcome. This method is accessible to anyone and is especially useful in the initial stages of design. Since these prototypes are disposable, you can iterate and refine your ideas without investing significant time or effort.

Example: If you're designing a new user interface for a mobile app, you can use sketching to draft different screen layouts and interactions. This approach helps you gain a sense of how the app might look and function before committing to more detailed design work.



[1] Original source: https://www.workshopper.com/post/design-thinking-phase-4-everything-you-need-to-know-about-prototyping#toc-sketches-and-diagrams

PAPER PROTOTYPING

Paper prototyping involves creating physical, paper-based models or mock-ups of your solution. It's a useful method for testing user interfaces and interactions. With paper prototypes, you can sketch movable elements and interactive features on different sheets of paper to simulate the user experience. Users can physically interact with these models by replacing sheets, sketching over previous ideas, or moving elements around the prototype.

Example: When designing a board game, you can create paper prototypes of the game board, cards, and game pieces. These paper prototypes allow you to test gameplay mechanics, rules, and player interactions in a cost-effective and iterative manner.

DIGITAL PROTOTYPING

Digital prototyping involves using specialized software tools to create interactive, on-screen representations of your solution. This method is particularly effective for testing and refining digital products, such as websites, mobile apps, and software interfaces. It allows you to build interactive simulations that accurately mimic the final product's functionality, enabling realistic user testing.

Example: If you're developing a website, you can create a digital prototype using software like Adobe XD, Figma, Sketch, or similar tools. These platforms enable you to design clickable prototypes that simulate user interactions. For instance, you can design and link web pages, navigation menus, and buttons, allowing users to navigate the website and experience its functionality. Similarly, digital prototyping is valuable when designing a mobile app, providing a realistic preview of how the app will look and function on a digital device.

PHYSICAL PROTOTYPING

Physical prototyping involves creating tangible, three-dimensional models of your solution using materials such as paper, cardboard, clay, or foam. These models can vary in size from small-scale to full-scale. The primary goal of physical prototyping is to transform two-dimensional concepts into three-dimensional representations, adding depth and realism.

This approach is valuable for user testing, as it allows hands-on interaction and promotes discussions about the solution's physical characteristics.

Example: When designing a new tablet computer, constructing a physical prototype using cardboard can provide a realistic, tactile model for users to hold and interact with. This enables them to provide feedback on the device's size, weight, and ergonomics, which might not be evident in digital designs alone.

Role-Playing

Role-playing is a form of experiential prototyping that involves physically acting out scenarios and situations related to your design project. This technique allows your design team to immerse themselves in the system you're targeting, gaining a deeper understanding of its strengths and weaknesses. Role-playing is a powerful tool for identifying what works and what doesn't within a given context. Role-playing can take various forms, but it is most effective when you simulate the physical environment in which the user will interact with the product or system. This can include using props, incorporating audio simulations (such

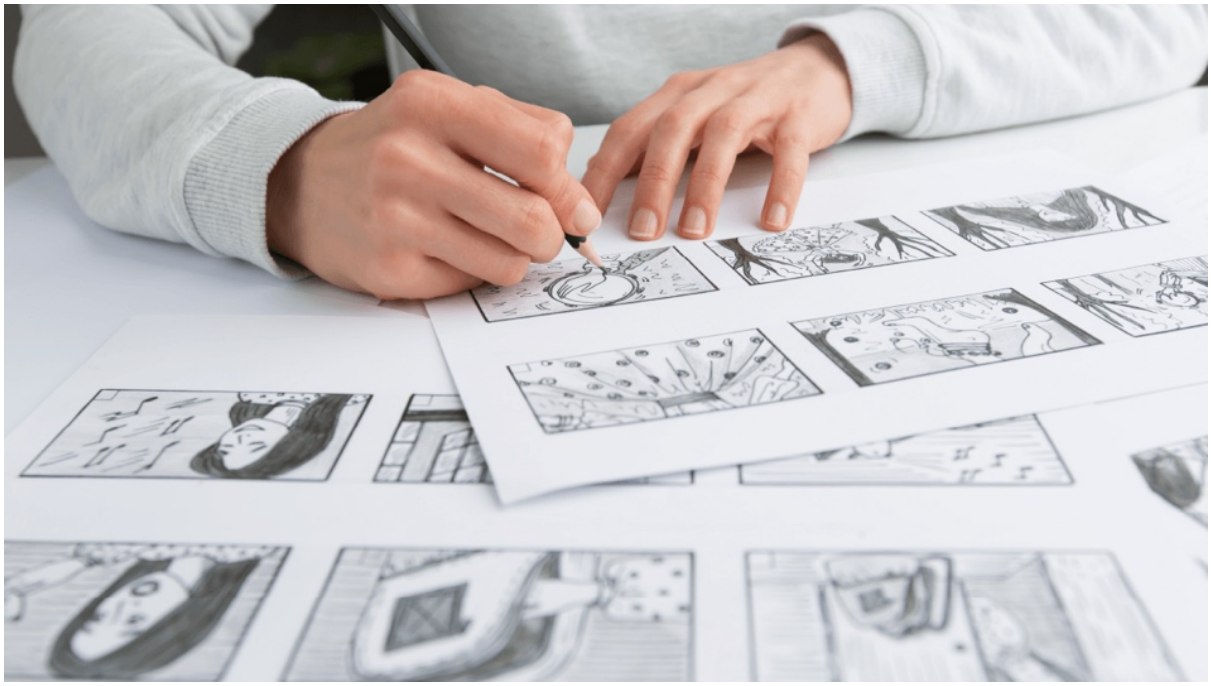
as music or sound effects), and utilizing objects from your workspace to create a more realistic scenario.

Example: When designing a digital project to encourage positive behaviors, such as healthy eating or regular exercise, your team can role-play various user interactions with the digital platform. By assuming the roles of users and navigating the platform, you can uncover usability issues, content gaps, and areas where the project can be enhanced to better engage and motivate users toward healthier habits.

Storyboarding

Storyboarding is a visualization technique derived from the film industry, and it's a powerful tool for guiding stakeholders and users through the experience of a product or concept. It uses visual narratives to illustrate how users interact with a system, service, or process, making it an effective way to convey the overall user journey. While storyboarding excels at presenting the broader aspects of an experience, it may not be suitable for fine-tuning intricate product details.

Example*:* When designing a new digital platform, you can create a storyboard that depicts a user's journey from initial interaction to achieving their goal. Each frame in the storyboard represents a critical step in the process, showcasing key interactions, decision points, and user reactions. By using storyboards, you can provide a clear, visual overview of the user's experience, making it easier to identify any major issues or opportunities for improvement in the overall flow and functionality.



User-Driven Prototypes

User-driven prototypes represent a distinct approach compared to other prototyping methods. Instead of designers creating prototypes to test on users, designers invite users to actively participate in the prototyping process within specified constraints. This method offers valuable insights into user priorities and thought processes, shedding light on assumptions that designers might have made. During this process designers can see what their users prioritise and how their minds work, which gives them lots of insight into the assumptions the designers' themselves could've made. Designers can use user-driven prototypes to gain empathy with users or to fine-tune certain details of the product once they have an idea in place.

***Example**:* In the development of a new app interface, designers organize a co-creation session with target users. Users are given constraints and tools to design their ideal interface elements. This process helps designers understand user preferences and ensures the final design aligns closely with user expectations and needs.