



## MODULE No: 3 “ENGAGE Workshop”

### Name “Ideate and Innovate” (6-8 hours)

**OBJECTIVE:** Creating ideas for solutions of a community challenge using “Ideate” and “Prototype” steps of the Design Thinking process.

#### LEARNING OUTCOME AND DESCRIPTORS

*Following are descriptors to measure learning outcomes from the implemented lesson.*

##### Knowledge on (K)<sup>1</sup>

- Methods to apply to find solutions to a challenge in a local community
- processes for decision-making in a local community
- creative thinking methods to create a prototype of a new solution

##### Skills in (S)<sup>2</sup>

- creative thinking in developing ideas and solutions to a specific challenge
- active listening and critical feedback
- cooperation and team working skills
- critical thinking and justification
- presenting own solutions to an audience

##### Competences to (C)<sup>3</sup>

- present and demonstrate solutions to a specific community challenge
- work together in a team on developing ideas and solutions to a specific challenge

#### TRAINING METHODS

Built on problem- based learning and Design thinking methodologies (see ENGAGE curriculum and pedagogical section of this handbook). This module is focused on generating new ideas and building a prototype for a solution to a community challenge. The training methods take ground in the “Ideate” and “Prototype” steps of the Design Thinking process with input from participatory group work where pupils are assigned to different community challenges to brainstorm and ideate on possible solutions to a community challenge.

Pupils will work in teams to create ideas using the third step of the Design Thinking process “IDEATE” and the fourth step “PROTOTYPE” or “INNOVATE”.

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<sup>1</sup> Knowledge refers to being able to read, understand and interpret information and guidelines.

<sup>2</sup> Skills refer to the ability to apply knowledge to complete tasks, select relevant actions and measure their effectiveness.

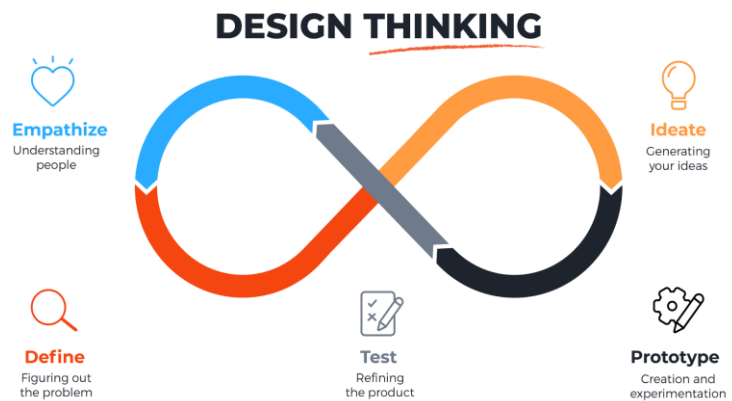
<sup>3</sup> Participants/pupils will have competences to put to practice general knowledge and skills acquired.



## OVERVIEW

This module is designed to be a follow up to the ENGAGE Module 2 “ENGAGE in research and definition” resulting in presentation of several problem statements that will be used as a starting point for this module.

While Module 2 was built upon the first two steps of the Design Thinking model, Empathize and Define, Module 3 focuses on Ideate and Innovate/Prototype steps. See picture (Source: [MAQE](#))



### Key concepts

The work is based upon following steps and rules:

- **Brainstorming of ideas, aim for quantity.** Refrain from judgement, there are no stupid or unrealistic ideas, “quantity breeds quality” sorting process comes later. Encourage pupils to come forward with weird ideas and to build on other people’s ideas.
- **Selection process** including sorting of ideas and a selection of one idea for each group’s community challenge.
- **Developing ideas, innovate and prototype if possible.**
- **Presentation of solutions and feedback** from fellow pupils and teachers. Feedback from community/stakeholder representatives is foreseen in Module 4.

The expected output from this module is a prototype of a process/solution/product aimed at solving a specific community challenge. Preparation before the session is to group pupils according to interest in a specific challenge prepared individually/in groups of two and presented in Module 2 and preferably announcing the groups to pupils before Module 3 starts for their feedback to be able to rearrange groups if needed.

*It is a good idea to involve community stakeholders in this module, especially if they were already involved in the interview and presentation session in Module 2. Stakeholders can act as mentors to the pupils in the creation of the solution/product (prototyping). See more information on the role of mentors in the ENGAGE Curriculum and Handbook.*

### Annexes:

- Stakeholder Template
- Prototype Design Guidelines
- Prototype Design Task List
- Guidelines for brainstorming, categorization, and selection of ideas (“Ideate” Template)



Activity	Method and organisation	Time
<p><b>Brainstorming ideas (defining the challenge/problem to be solved)</b></p> <p><b>Challenge:</b> participation and creativity, cooperation, and communication.</p> <p><b>Result:</b> Idea bank</p>	<p>Teacher sets the scene for the “Ideation” part of this module. Ideation is focused on finding as many ideas/solutions to the community challenges selected at the end of Module 2 as possible. The teacher goes through the process and rules of brainstorming, see slides. Teacher encourages everyone to participate and come up with weird, wacky, and wild ideas and reminds the pupils that there is no wrong idea in brainstorming. <i>Teacher also presents participating stakeholders if applicable.</i></p> <p>Pupils start working in the 3-5 person groups they selected at the end of Module 2 “Defining” concentrating on idea generation for the community challenge they defined. <b>One group member facilitates the discussion</b> and starts with presenting/discussing assigned problem statement. The group start brainstorming for ideas individually and researching the topic of the community challenge using the internet if needed.</p> <p>Each group member presents his ideas for a solution to the community challenge. Another group member writes a single idea on a blank piece of paper. Other group members add complementary ideas to the already presented idea to the sheet if applicable. Each group generates as many Idea sheets as there are ideas in the group. Mind maps can also be used here if applicable.</p> <p>Teacher/<i>stakeholders</i> walks between students, answer questions and assists.</p>	<p>5 min.</p> <p>15-20 min.</p> <p>10-15 min.</p>
<p><b>Brainwriting</b></p> <p><b>Challenge:</b> Critical and creative thinking, cooperation.</p> <p><b>Results:</b> More developed ideas.</p>	<p>Teacher now presents a <b>brainwriting exercise</b> to the pupils. I brainwriting group members pass the Idea sheets one to one another in a circle, building on and complementing each other's ideas, see slides.</p> <p>Groups start brainwriting using the idea sheets (from first session) for 15 minutes. Brainwriting can be done in text or drawings if applicable.</p> <p>Once the teacher tells the pupils that time is up each pupil presents the idea, he ended up with to their group members with complementary suggestions added during the brainwriting</p> <p>Teacher/<i>stakeholders</i> walk between students, answer questions and assists.</p>	<p>5 min.</p> <p>15 min.</p> <p>10-15 min.</p>
<p><b>Idea categorization and selection</b></p> <p><b>Challenge:</b> communication, creative and critical thinking.</p> <p><b>Results:</b> 1-2 selected ideas from each group or to each selected community challenge.</p>	<p>Teacher presents and distributes guidelines for categorizing and selecting ideas to continue working on and developing prototype/-s for.</p> <p>Groups work together on ideas developed in the last session using the “Four categories method” to discuss and categorize ideas into: Most rational - Most delightful - Darling - Long shot. (Interaction Design Foundation)</p> <div data-bbox="491 1809 1093 1930" style="text-align: center;"> <p>Most rational    Most delightful    Darling    Long shot</p> </div> <p>Each pupil then gets 3 votes to select the best idea and can use up to 2 votes for one idea but only 1 vote for an idea created by him/herself.</p>	<p>5 min.</p> <p>20 min.</p> <p>10 min.</p>



Activity	Method and organisation	Time
	<p>Teacher/stakeholders work with individual groups to gather results and decide upon the 1-2 best ideas for each group to develop further into a prototype. Normally each group will only select one idea to carry forward into prototyping</p>	10 min.
<p><b>Prototyping solutions</b></p> <p><b>Challenge:</b> Visualization, hands on approach and creative approach.</p> <p><b>Result:</b> Prototypes for solutions to community challenges.</p>	<p>Teacher presents the prototyping stage of development and the steps involved. This stage gets the pupils closer to a final solution to the selected community challenge although if a final solution is to be reached a Testing stage should be included in the process. During the presentation, the teacher will emphasize that a prototype can be anything the intended “user” can interact with, a wall of post-it notes, a gadget groups put together, a storyboard, a drawing process, a chart, or a role-playing activity. If the pupils decide to build something it should be made from existing material (paper, wood or other material provided by the school or available in closest environment).</p> <p>Groups start working on a prototype for one idea for a selected challenge. The group divides tasks among themselves and read carefully over the guidelines on steps in building a prototype which are:</p> <ol style="list-style-type: none"> <li>1. Reflection (WHY AND WHAT): review and reflect on the idea for a solution that the group selected (the challenge and the proposed solution). Is the idea clear for everyone? (Use “Ideate” template for this reflection)</li> </ol> <p>Teacher/mentor walk between groups and help if needed. Teacher prompts pupils about the time</p> <ol style="list-style-type: none"> <li>2. Stakeholders (WHO): Build on the “user” analysis from the Define/Empathy session in Module 2 to list all relevant stakeholders of the new solution (everyone who will benefit indirectly and directly from it). Group members reflect first individually, and then in groups, on who the stakeholders are and then list them together. Use “stakeholder template”</li> </ol> <p>Teacher/mentor walk between groups and help if needed. Teacher prompts pupils about the time</p> <ol style="list-style-type: none"> <li>3. Build a prototype (HOW): Start the design process. Begin by listing the steps in designing the prototype (different tasks, expected outputs and measuring success) and then start building. Use “Prototype Task List template”</li> </ol> <p>Teacher/mentor walk between groups and help if needed. Teacher prompts pupils about the time if relevant. This step could partly at least be done outside the classroom</p> <ol style="list-style-type: none"> <li>4. Present a prototype: present the prototype briefly to your fellow pupils, teacher, and mentors (if applicable).</li> </ol> <p>Teacher, and stakeholders if present, help and guidance to the groups.</p>	<p>15-20 min.</p> <p>10 min.</p> <p>10 min</p> <p>20-30 min</p> <p>90-150 min</p> <p>Next session</p>



Activity	Method and organisation	Time
<p><b>Presenting prototypes to fellow peers</b></p> <p><b>Challenge:</b> Communicating and demonstrating solutions with prototypes.</p> <p><b>Results:</b> Prototypes for solutions to community challenges.</p>	<p>IF THERE IS TIME IF NOT THIS PART OF THE LESSON WILL BE IN MODULE 4</p> <p>Teacher facilitates and organizes presentations by the different groups. Encourage pupils to engage with the audience (fellow peers) and if applicable have them test prototypes.</p>	10 min.
	<p>Each group gets max 5-10 minutes to demonstrate and present their prototype of a solution to the audience. Teachers encourage the audience to ask questions and provide feedback.</p> <p>This session is a preparation for the finalization of a presentation of the challenge and the solution/prototype to stakeholders/decision-makers in the local community (Module 4).</p>	60 min.

**EVALUATION AND FEEDBACK**

Following are a few general descriptors to evaluate the workshop process/outcomes and pupils’ participation:

1. Participants’ engagement, everyone involved.
2. Communication and cooperation.
3. Number of Ideas created (solutions to a specific challenge)
4. Quality of session output
  - o Ideas selected for further development
  - o Prototypes presented

This module includes a peer-to-peer review of prototypes in the end, see template, as well as active participation and cooperation of students in developing, categorizing, and selecting ideas.

Possible to include a short pupils evaluation form as well as teachers will evaluate each pupil based on following descriptors on learning outcomes.

*The pupil should be able to:*

<b>DESCRIPTORS:</b> Knowledge (K), Skills (S) and Competences (C)	<b>Poor (D)</b>	<b>Fair (C)</b>	<b>Good (B)</b>	<b>Excellent (A)</b>
<b>(K)</b> on methods to create new ideas/solutions to identified challenges in their community				
<b>(K)</b> on use of tools to generate new ideas, identify stakeholders and build a prototype of a solution				
<b>(S)</b> in creative thinking in developing and implementing ideas into new solutions				
<b>(S)</b> in active listening and giving constructive feedback				



<b>DESCRIPTORS:</b> Knowledge (K), Skills (S) and Competences (C)	<b>Poor (D)</b>	<b>Fair (C)</b>	<b>Good (B)</b>	<b>Excellent (A)</b>
<b>(S)</b> in cooperation and team working				
<b>(S)</b> in critical thinking and justification				
<b>(S)</b> in presenting ideas and prototypes (solutions)				
<b>(C)</b> to demonstrate new solutions to community challenges				
<b>(C)</b> to work in a team on developing new ideas and solutions				

## TEACHERS REFLECTION: