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# VASE Report 3: Transferability and sustainability plan

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For more information about the project, and the development process:
http://vase.mau.se.

Join the LinkedIN community “Teaching for values in design”:
https://www.linkedin.com/groups/9043787.



October 19, 2021

# Abstract

The report presents a summary of the project outputs delivered by the Erasmus+ project Value sensitive design in higher education (VASE). A model of the VASE pedagogical framework is presented, which visually illustrates all the components that the open educational resource (OER) developed as part of the project consists of. The report also includes a sustainability plan creating conditions for optimal use of the project's results beyond the project period. The report ends with a future scenario to imagine and analyse potential widespread consequences or societal impacts of teaching for values in design. The expected impact on the teachers taking part of this report is that they gain an overall understanding of the outputs of the VASE project, the different components that the OER consists of, how it can be used and where to access it. By accessing knowledge about how such teaching resources can be applied in educational settings they may obtain new pedagogical ideas for renewing their own teaching.

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# 1. Introduction

This report includes a summary of the project outputs delivered by the European Erasmus+ project Value sensitive design in higher education (VASE, n.d.). It presents a model of the VASE pedagogical framework that visually illustrates all the components that the open educational resource (OER) (VASE, 2021) developed by the VASE project consists of. The model also illustrates how the teaching materials can be applied by teachers when planning for and conducting teaching. Furtheron, a description of the design of the OER website (VASE, 2021) is presented that allows for the teaching resources to be transferred to, accessed and appropriated by teachers (and potential others). The methods and procedure used for developing the teaching resources are described in the VASE Report 2: Evaluation of pilot testing of the teaching and assessment activities (Barendregt et al., 2021) and in several peer reviewed publications developed by the VASE project (e.g. Barendregt et al., 2020; Eriksson et al, 2021; Nørgård et al., forthcoming).

To create conditions for optimal use of the project's results beyond the project period, the report presents a sustainability plan and strategies for how to reach out to the target groups and ensure a life after the project has ended. The report ends with a future scenario to imagine and analyse potential widespread consequences or societal impacts of teaching for values in design.

The expected impact on the teachers taking part of this report is that they gain an overall understanding of the outputs of the VASE project, the different components that the OER consists of, how it can be used and where to access it. By accessing knowledge about how such teaching resources can be applied in educational settings they may obtain new pedagogical ideas for renewing their own teaching.

The report partly consists of texts published on the OER (VASE, 2021), and a selection of publications developed by the VASE project (Kok et al., 2021; Nørgård et al., forthcoming).

# 2. Summary of the project outputs

The VASE project has delivered six intellectual outputs (Outputs 1–6) and organised a multiplier event (the webinar), which in the following are summarised and presented. The outputs are further described on the OER (VASE, 2021) and in the publications developed by the project (see Appendix A).

## Output 1: Teaching resources on values in design

A collection of 28 teaching activities (see Table 1) is developed targeting teachers in design and engineering programs in higher education who aim to give their students the tools and skills to become responsible designers. In addition, eight case descriptions are developed illustrating how these teaching activities can be put into practice in various educational settings.

The teaching activities cover the entire design process and range from introductory lectures

on values in design, to exercises on stakeholder identification, to envisioning future scenarios in order to understand the systemic consequences of design (Barendregt et al., 2020). The activities can be tailored to fit different courses in various educational settings, across different levels and disciplines. Together, the teaching activities aim to equip students with the competencies to critically consider values in design throughout and beyond the design process. All teaching activities provide suggestions for one or two assessment activities from the collection of assessment activities developed within the project (see Output 3).

The collection of teaching activities is accompanied by learning outcomes structured in a curriculum compass (Figure 1) outlining general learning outcomes for teaching about values in design. The curriculum compass uses three core competency pillars to structure the teaching activities: I) Ethics and Values, II) Designers and Stakeholders, III) Technology and Design. The three pillars aim to cover what we consider the main knowledge and skills for becoming a responsible designer: the theoretical background, a focus on different stakeholder needs, as well as the skills to actively engage with technology and values in the design process.

I) Ethics and Values
The Ethics and Values pillar explains the underlying theoretical foundations that students need in order to take ethics and values into account, both in their methods and in their design process, as well as in taking responsibility for their end product or service.

Overarching learning objectives:
– Recognise and describe different values
– Critically reflect on how values are manifested in design

II) Designers and Stakeholders
The Designers and Stakeholders pillar addresses methods and processes for students to ethically engage with different stakeholders and their values, acknowledging that they themselves are stakeholders too.

Overarching learning objectives:
– Identify and describe direct and indirect stakeholders of a design
– Elicit stakeholder values
– Identify possible tensions between different stakeholder values and imagine how to mediate these tensions in a design

III) Technology and Design
The Technology and Design pillar addresses methods and processes that allow students to practically design and evaluate products and services with values in mind.

Overarching learning objectives:
– Integrate values into the design process
– Analyse and critically reflect on the impact of a design (draft) and its manifested values in context

| Core competency pillar | Teaching activities |
|---|---|
| I) Ethics and Values | T1. Introduction to values in design<br>T2. Introduction to ethics in design<br>T3. Introduction to cultures and values in design<br>T4. Design with and for certain philosophies<br>T5. Manifestos on values and ethics<br>T6. Values manifested in products, system and services<br>T7. Values clustering for developing students' value vocabularies<br>T8. Understanding values changing over time |
| II) Designers and Stakeholders | T9. Individual designer's values identification and hierarchy<br>T10. Design team's values identification and hierarchy<br>T11. Design team's value statement manifesto<br>T12. Listing stakeholders and their values<br>T13. Stakeholder values elicitation<br>T14. Mapping stakeholder value landscapes<br>T15. Project values identification<br>T16. Value-based reformulation of the design draft<br>T18. Constructing value based design requirements<br>T17. The game changer |
| III) Technology and Design | T19. Visualising values in design with mood boards<br>T20. Understanding value tensions<br>T21. Identifying and resolving value tensions<br>T22. Exploring values through extreme worlds<br>T23. Re-designing for different cultures<br>T24. Envisioning future scenarios<br>T25. Contextualising values through reflection in action<br>T26. Evaluating values in design with stakeholders<br>T27. Public examination of values in design<br>T28. Design after evaluation of prototype |

*Table 1. 28 teaching activities distributed across the three core competency pillars.*

The teaching activities are also distributed in order of difficulty through the SOLO taxonomy (Unistructural, Multistructural, Relational and Extended abstract) (Biggs, 1982). Progression in students' learning can be defined as moving up in SOLO levels, from uni-structural, to multi-structural, relational, and up to extended abstract level as the highest level. Using the SOLO taxonomy visualises how students' understanding of values in design develops from a simple to more complex level throughout the design process and across the three core competency pillars.

| Pillars | Design Phase | SOLO Taxonomy Level | | | |
|---|---|---|---|---|---|
| | | Unistructural ● | Multistructural ●● | Relational ●●● | Extended Abstract ●●●● |
| Ethics & Values | Values Theory | Identify values and name approaches to ethics (e.g., consequentialism) and values in design (e.g., Value-Sensitive Design). | List, describe, and combine different approaches to ethics and values in design. | Analyze, compare, and argue for how values are manifested in design. | Interpret, evaluate, and critically reflect on values and their manifestations in design. |
| Designers & Stakeholders | Research | Recognize and define the notions around researching designers' and stakeholders' roles and values (e.g., indirect & direct stakeholders). | List, characterize, and report on designers' and stakeholders' roles and values. | Elicit, interpret and contrast designers' and stakeholders' roles and values. | Judge, reason about, and critically reflect on designers' and stakeholders' roles and values. |
| | Synthesis | Recognize and define the notions around interpreting and combining different designer and stakeholder values into a design direction (e.g., value manifesto). | List, characterize, and report on notions around interpreting and combining different designer and stakeholder values into a design direction. | Interpret, adapt, and plan one's design direction based on the identified designer and stakeholder values. | Reason about, reflect on, and criticize the newly developed design direction based on the identified designer and stakeholder values. |
| Technology & Design | Ideation | Identify methods for ideating with values (e.g., envisioning). | List and describe methods for ideating with values. | Adapt and apply methods for ideating with values. | Critically reflect on the results of the ideation with values. |
| | Evaluation | Identify methods for evaluating designs in terms of values (e.g., public evaluation). | List and describe methods for evaluating designs in terms of values. | Adapt and apply methods for evaluating designs in terms of values. | Critically reflect on the evaluation of the designs in terms of values. |

*Figure 1. The curriculum compass outlining general learning outcomes for teaching about values in design.*

The curriculum compass may be used by teachers to get background information, navigate through the teaching activities, and select teaching activities based on their difficulty or appropriateness in the design process. Each learning outcome is connected to several teaching activities associated with this particular outcome.

# Output 2: Report 1 – Desk research on teaching and assessing for values in design in higher education

The report 1 part I and II (Bekker et al., 2019; Gyldendahl Jensen et al., 2021) present and analyse the current status of research, innovative practices and best practices on value-sensitive design, and the teaching of value-sensitive design, and how it is being assessed. Parts of the reports have served as a content to peer reviewed publications developed by the VASE project (see Appendix 1).

**VASE Report 1 part I: Desk research on teaching for values in design in higher education**

The report provides an overview of information relevant for teaching students about values in design in the context of higher education. It addresses why values play an important role in design, and why students in engineering and design should be aware of values. Thereafter, it specifies more exactly what we mean with values, especially in the light of the term "values" being used in many different ways in the literature related to engineering and design. Subsequently, we discuss some existing models for values and then turn to how values in design have been addressed and taught previously, as well as some of the resources already available for teaching students about values in design and how to become responsible designers. This report ends with three descriptions of potential teaching activities that form the basis for the development of a set of teaching activities with

accompanying assessment activities for teaching students in higher education engineering programmes about values in design and how to become responsible designers.

**VASE Report 1 part II: Desk research on assessment activities for teaching for values in design in higher education**
The report provides an introduction to the theoretical aspect of assessment in order to propose a range of different assessment forms developed specifically for teaching design and engineering students about values in design. Such a framework should provide utility for informing directions and instruction for assessment activities. This entailed conceiving of a framework or abstract model from which to integrate mapping different assessment forms with signs for/of learning (knowing, doing and attitudes). The report thus deals with different ways of looking at assessment forms or concepts in relation to teaching for values in design. The purpose is to develop examples of different assessment activities that can be related to teaching values in design.

# Output 3: Assessment activities and criteria

To assess whether the intended learning outcomes outlined in the curriculum compass were attained by the teaching activities, a collection of 12 assessment activities was developed (see Table 2). The assessment activities are described on a quite general level so that they can be appropriated to fit different types of teaching activities. The assessment activities are structured around the three main competence types related to learning, namely knowledge (knowing), skills (doing), and attitudes (being) (Baartman & Bruin, 2011). Additionally, the assessment activities are structured in four assessment forms: summative, formative, authentic and ipsative.

In summative assessment, the focus is on measuring the level of learning, typically against standardised criteria, by collecting, interpreting, and reporting evidence of learning (Dolin, 2017). In formative assessment, the goal is to provide feedback that moves students forward (Hughes, 2014). Theoretically, any assessment activity can be assessed summatively (typically by giving a grade) or formatively (typically by providing feedback). This includes traditional assessment activities such as examinations or (prototype) design deliverables.

Authentic assessment (or performance assessment), is an assessment form which focuses on the value of students' learning in the “real world” (situated assessment in context), translating school-based ideas to authentic situations and tasks (Ashford-Rowe et al., 2014). Ipsative assessment activities aim to activate students as owners of learning (Hughes, 2014). Ipsative assessment compares a learners’ current performances with their previous performances, making it a highly personalised form of assessment. Throughout this process, ipsative assessments provide valuable feedback for students about their strengths and weaknesses.

| **Competency type** | **Assessment form** | **Assessment activities** |
|---|---|---|
| Knowledge | Summative | A1. Mind mapping for responsible design |
| | Formative | A2. Reflective values report |

| | | |
|---|---|---|
| | Ipsative | A3. Personal video |
| | Authentic | A4. Applying knowledge to real-world examples |
| Skills | Summative | A5. Video pitching for responsible designers |
| | Formative | A6. Round Robin values Brainwriting |
| | Ipsative | A7. Historical value timeline |
| | Authentic | A8. Peer feedback for responsible designers |
| Attitude | Summative | A9. Case-based assessment for responsible designers |
| | Formative | A10. Self assessment for responsible designers |
| | Ipsative | A11. Blogging for responsible designers |
| | Authentic | A12. Values exhibition or public workshop |

*Table 2. 12 assessment activities spanning over competency types and assessment forms.*

## Output 4: Report 2 – Evaluation of pilot testing of the teaching and assessment activities

The report 2 (Barendregt et al., 2021) provides an overview of the development and evaluation procedure for the teaching and assessment activities including results from the pilots.

**VASE Report 2: Evaluation of pilot testing of the teaching and assessment activities**
The report maps out the development and evaluation procedure for the teaching and assessment activities. This is further complemented with information about the procedure for and results from all pilots of teaching activities which have been conducted as part of the project. In total, the project has developed a pedagogical framework consisting of 28 teaching activities, 12 assessment activities, a curriculum compass to structure the activities, and one OER from which all materials are openly available to teachers. All output is based on two desk-research reports, 38 pilots in four countries, conducted by 50 teachers involving 1 563 students in various design and engineering programs. Finally, the report presents the indicators and measures for successfully piloting the teaching and assessment activities.

## Output 5: Communication strategy

A communication strategy for internal and external communication of project results during and after the project period was developed and reviewed by communication officers at two partner universities. The work with the communication strategy also included the development of a sustainability plan (presented in chapter 4) developed to ensure optimal spread and use of the project results beyond the end of the project period. Efforts were also put into identifying and evaluating different online platforms that could be used for publishing the OER. Eventually we decided to use a web server, hosted by one of the partner universities until the year 2028.

A project website (VASE, n.d.) was designed and implemented at an early phase of the project and used throughout the project period as a platform for sharing information about the consortium, activities and events, publications etc. When the project ended, the website was turned into an archive linking to other resources that will continue to live on after project completion, such as the LinkedIN community “Teaching for values in design”[1] and the OER (Teaching for values in design, 2021). The publication list published on the project website will continue to be updated when new publications connected to the project are developed.

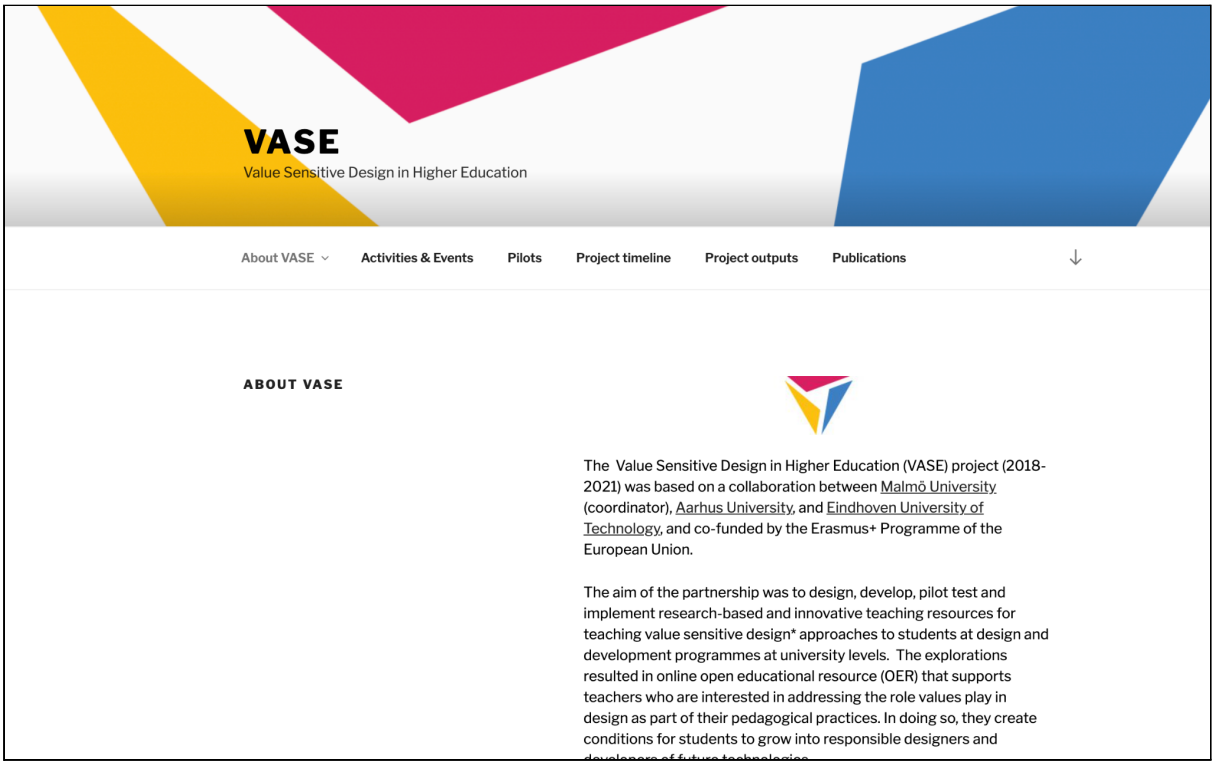



*Figure 2. The entrance page to the VASE project website (VASE, n.d.)*

VASE style guidelines were developed and served as a foundation when designing the logotype, the visual appearance of both the project web site and the OER. The guidelines were also used by partners when developing slide presentations for conferences or other events where visual materials were used.

[1] The LinkedIN community “Teaching for values in design” https://www.linkedin.com/groups/9043787/, accessed on 2021-10-19.

# VASE STYLE GUIDELINES

Version 1.0

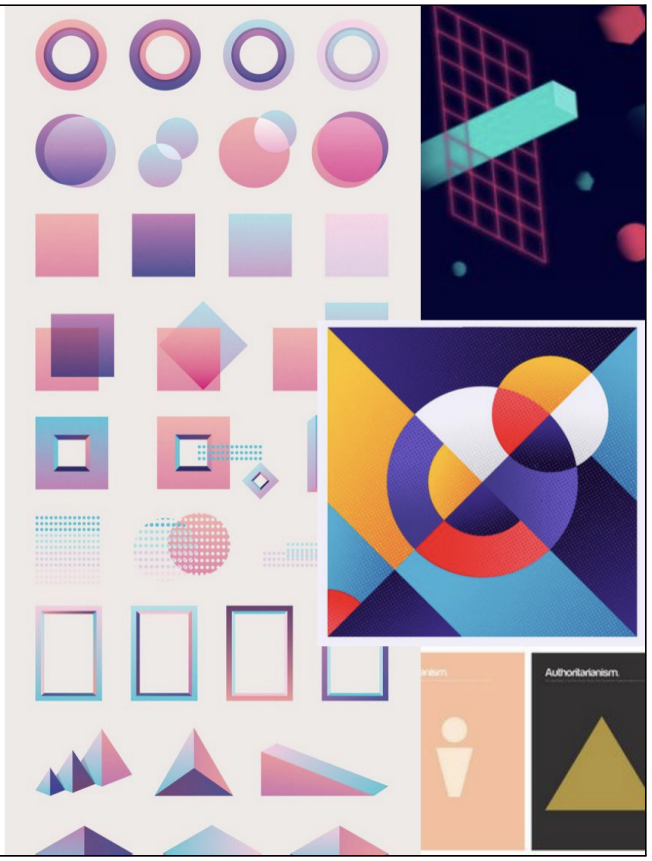




## STYLE INSPIRATION

The VASE project aims to collect fundemental building blocks that can aid teachers in their teaching. As such, the project provides 'Teaching Patterns' and 'Assessment Patterns': general, reusable solutions to the problem of teaching or assessing a certain learning goal in education.

As such, a visual style should represents these **building blocks**. We take inspiration from the Constructivist art movement (offshoots like Bauhaus and 'de Stijl'). Through basic shapes that connect and overlap and primary colors, we communicate the **fundamentality**, **versatility** and **customizability** of our tools. To bring this modernist style into the current age, we use gradients to communicate **transferribility**.



# LOGO

## Variations

The primary logo of VASE consists out of three parts: the triangle logo image, the word mark and the pay-off. The logo image consist out of three triangles positioned in a triangular shape. Each triangle is colored with one of the primary VASE colors, each representing one of the three pillars of VASE.
There are two variants of the primary logo: Positive and negative. The positive logo is used for almost everything, with the reverse logo as an exception for applications with a dark or colored background.

**Gradient:**


**Reverse logo:**


**Flat:**


**Colored background:**

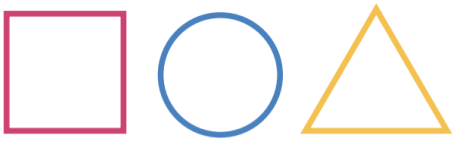




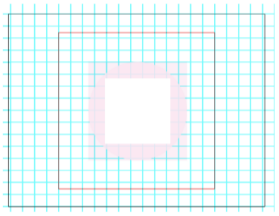

# ICONS

Inspired by the constructivist art movement, we design icons based on basic shapes: squares, circles, and triangles. These shapes can be combined by overlapping or merging. All shapes will be implemented in **white** with 50% opacity.

To design these icons, we use a special grid that ensures consistancy in size en form.



**1. Basic Shapes**



**2. Design**

**3. Implementation**



*Figures 3-6. Selected pages from the VASE style guidelines.*

# Output 6: Open Educational Resource (OER)

The teaching materials developed (Output 1 and 3), including teaching and assessment activities, the curriculum compass, case descriptions and the pedagogical framework are published as an OER made freely accessible online for teachers (and potential others) that are interested in teaching the topic.

The development of the OER followed a comprehensive design process consisting of a research and synthesis phase where an overall structure of the OER was developed. That phase was followed by an ideation phase where a range of different concepts for the OER were developed. The structure, the interaction points and visual appearance were iterated in several rounds. In the last phase of the design process the concept was usability tested resulting in a list of suggested improvements, which were addressed in the final iteration of the concept.

The OER entitled “TEACHING FOR VALUES IN DESIGN**:** Creating conditions for students to grow into responsible designers and developers of future technologies” consists of six sections: Home, Curriculum compass, Teaching activities, Assessment activities, Case descriptions, About.

**Home**
From the Home page, all six sections can be accessed (see Figure 7).

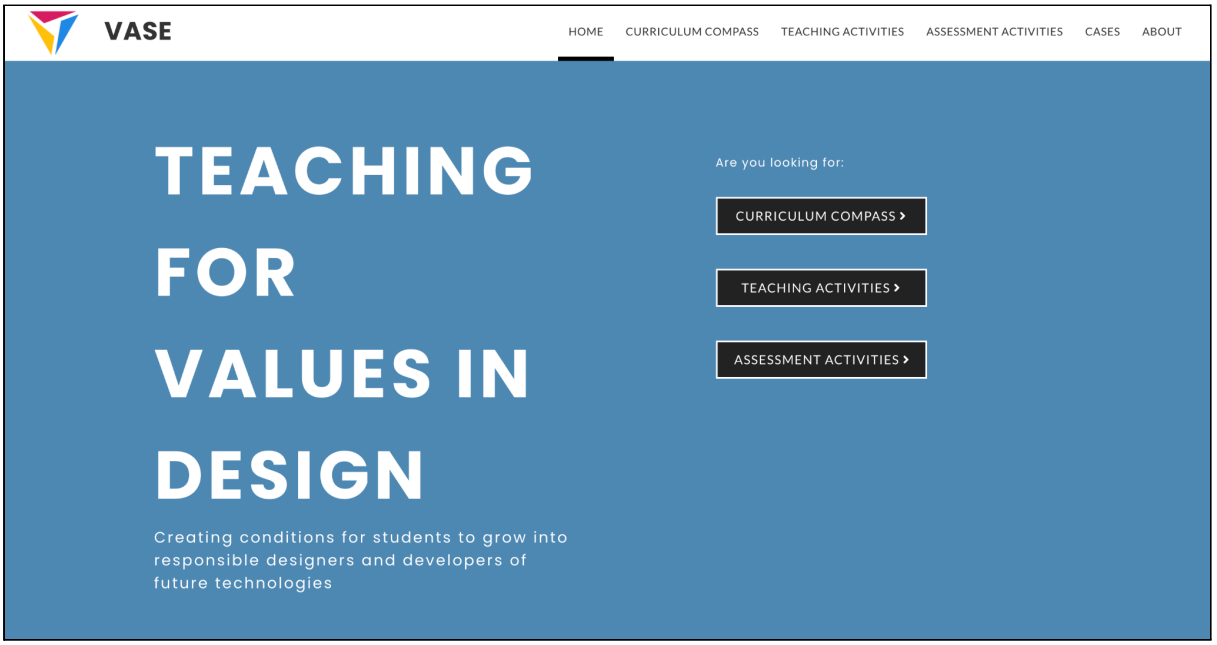



*Figure 7: The Home page and entrance to the OER.*

When scrolling down on the Home page, the VASE pedagogical framework model (see chapter 3) is presented, which provides an overview of all of the components that this OER consists of. The model also visualises how the different components offered can be configured and used by teachers to meet their own needs.

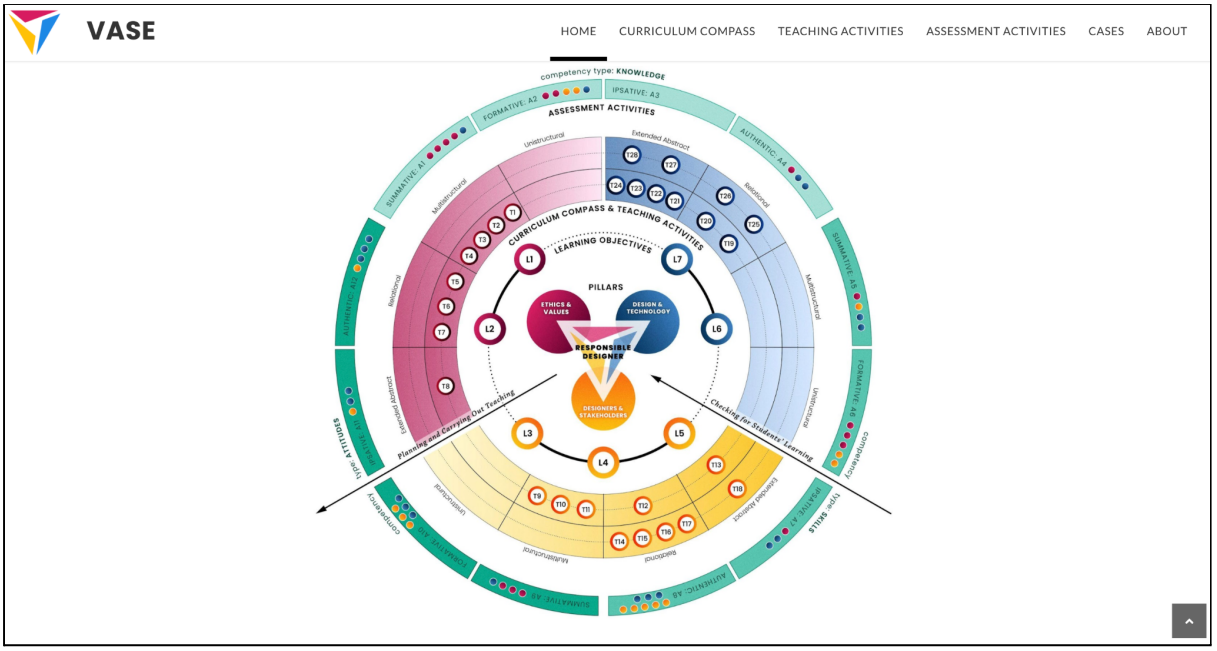



*Figure 8. The model of the VASE pedagogical framework.*

Below the pedagogical framework model, three boxes are presented linking to other resources: Cases, Publications developed by the VASE project, and the VASE booklet. The VASE booklet (in a pdf format) gathers all the materials included in the OER, and can be downloaded and printed.

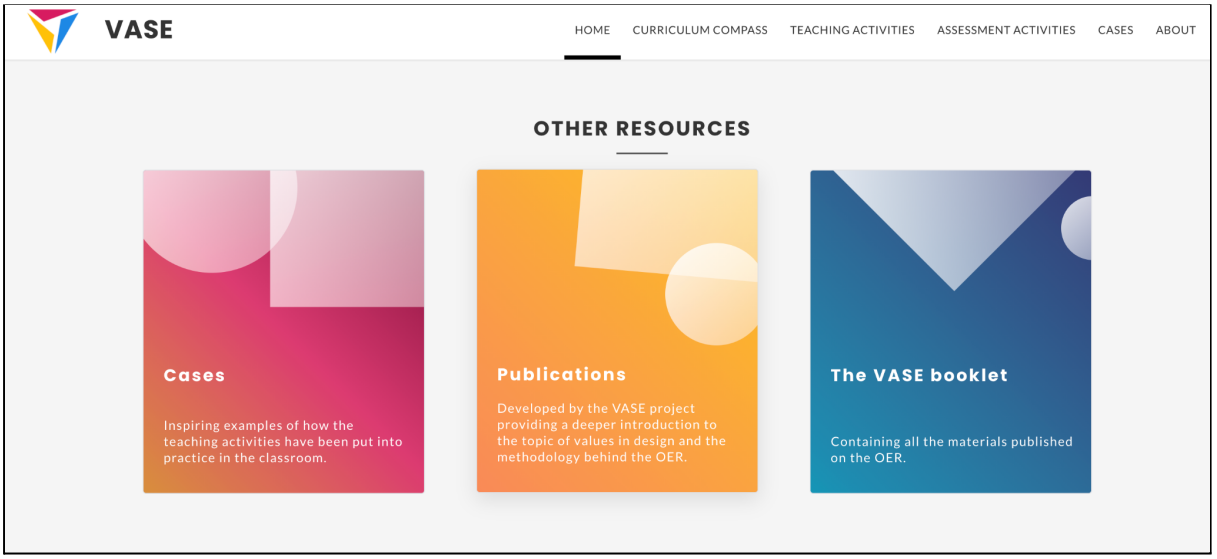



*Figure 9. Links to other resources.*

**Curriculum compass**

The Curriculum compass (see Output 1, Figure 1) section introduces the compass and the different parts it builds upon: the core competency pillars, the design phases, the SOLO taxonomy levels (Figure 10). Below the compass, further background information is available about the different parts and the theories behind (Figure 10).

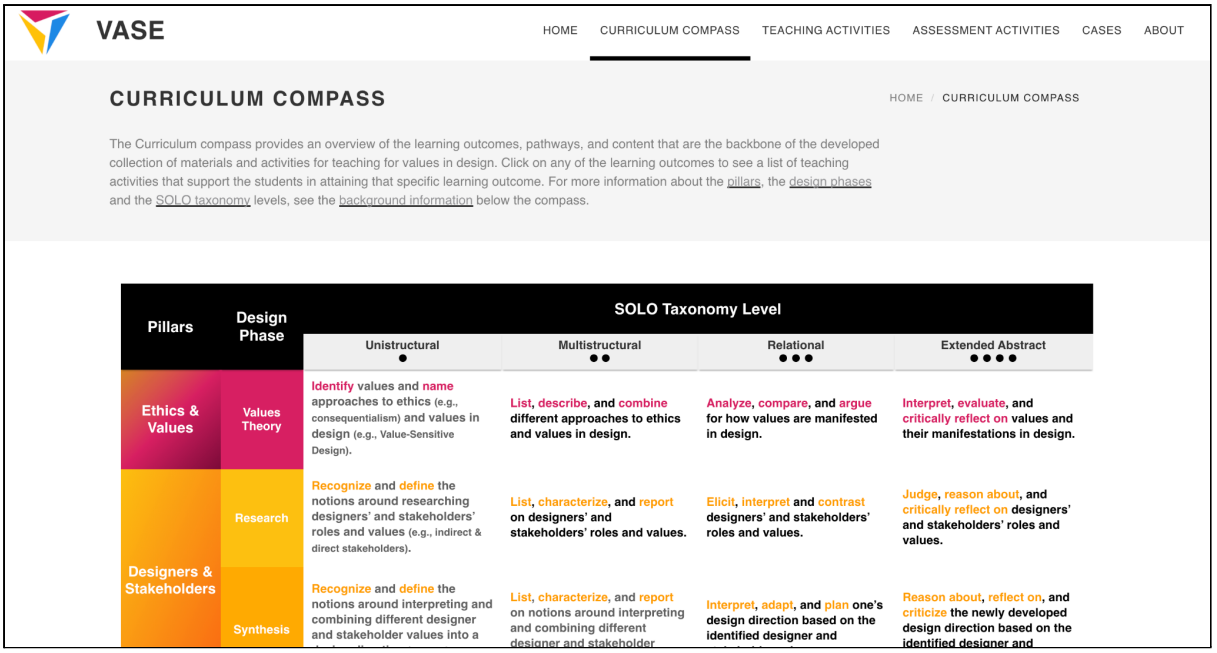



*Figure 10. The Curriculum compass with an introductory text linking to further background information.*

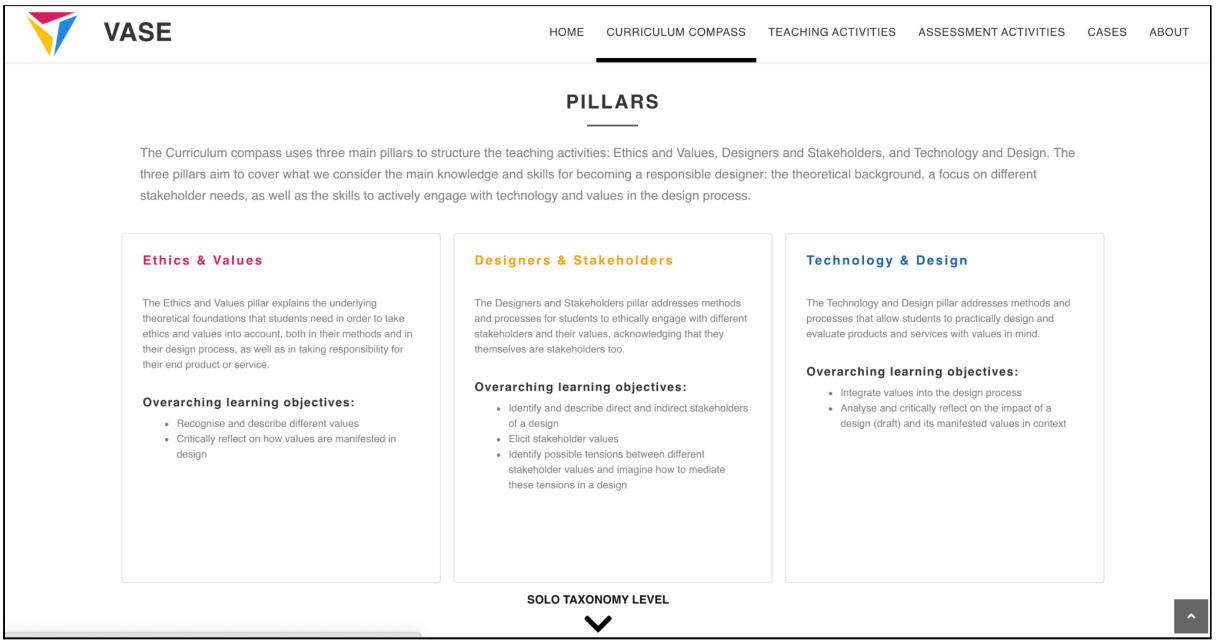



*Figure 11. Background information placed below the Curriculum compass.*

When clicking on a specific learning outcome in the Curriculum compass, a pop-up window appears (Figure 12) which links to suggested teaching activities that can be used to support students in achieving these learning outcomes. The pop-up window also links directly to these teaching activities in the section Teaching activities.

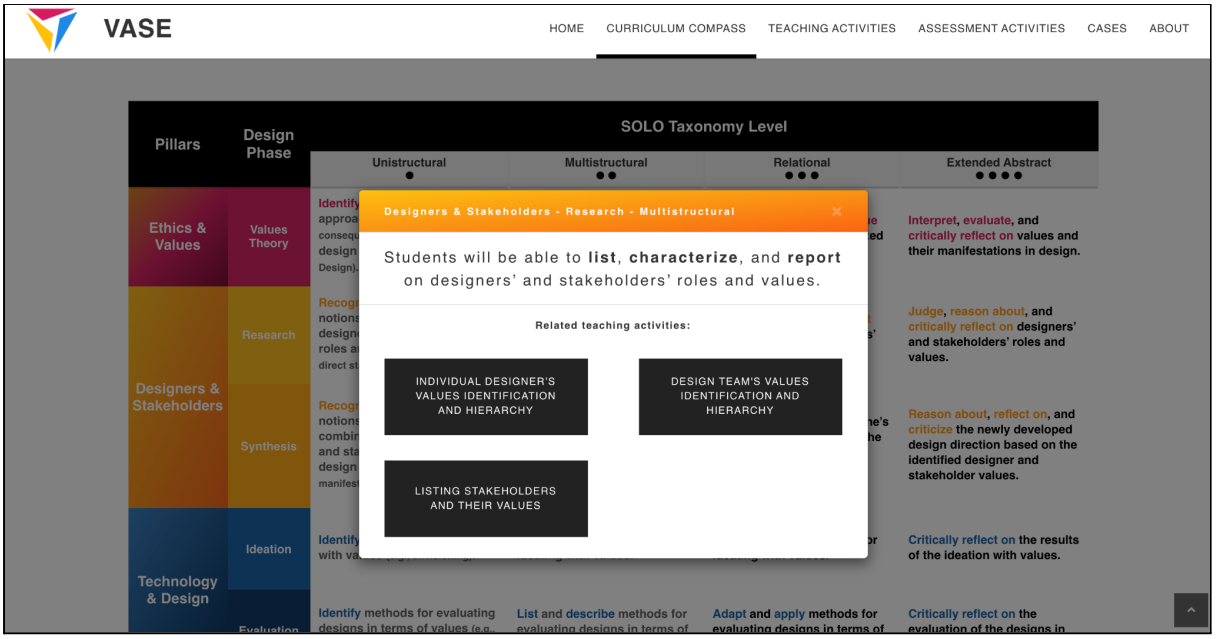



*Figure 12. Pop-up window presenting the suggested teaching activities.*

**Teaching activities**

The section includes the 28 teaching activities presented in three columns representing the three core competency pillars (Ethics and Values, Designers and Stakeholders, Technology and Design) (Figure 13).

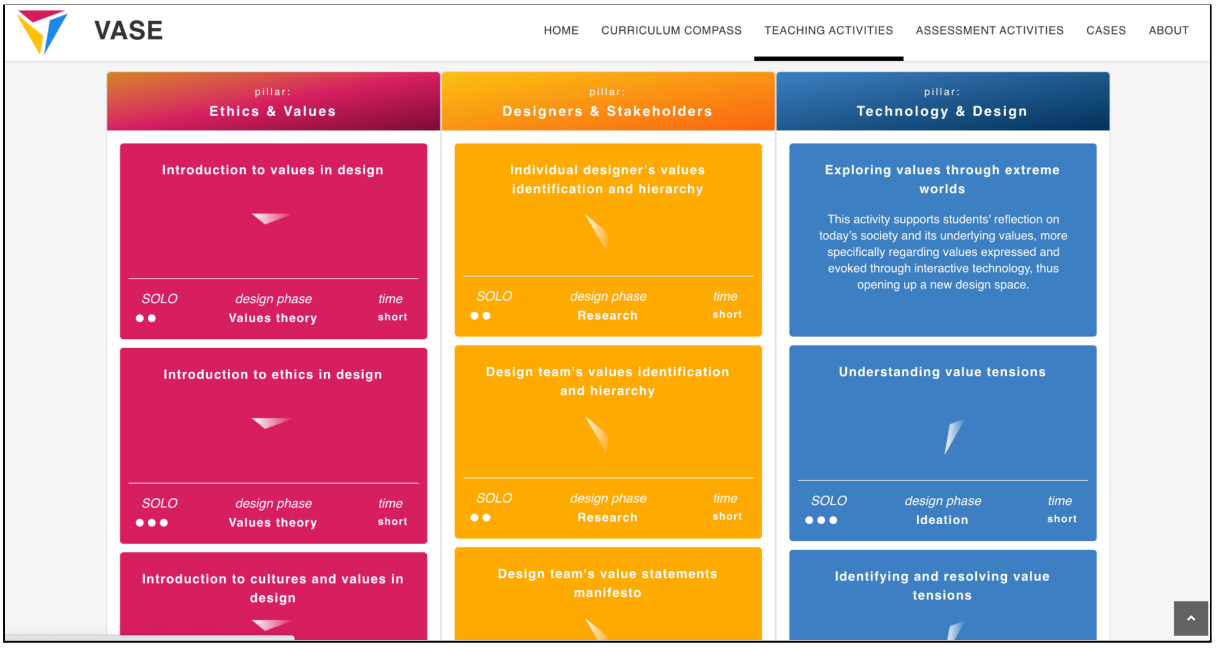



*Figure 13. Teaching activities distributed across the three three core competency pillars.*

A filtering mechanism is offered for filtering the teaching activities by selecting which design phase the teaching activity should address, the complexity level (according to the SOLO taxonomy: Unistructural, Multistructural, Relational, Extended abstract), and how much time needed for running the activity (Short: 1/2 day, Medium: 1-2 days, Long: more than 2 days).

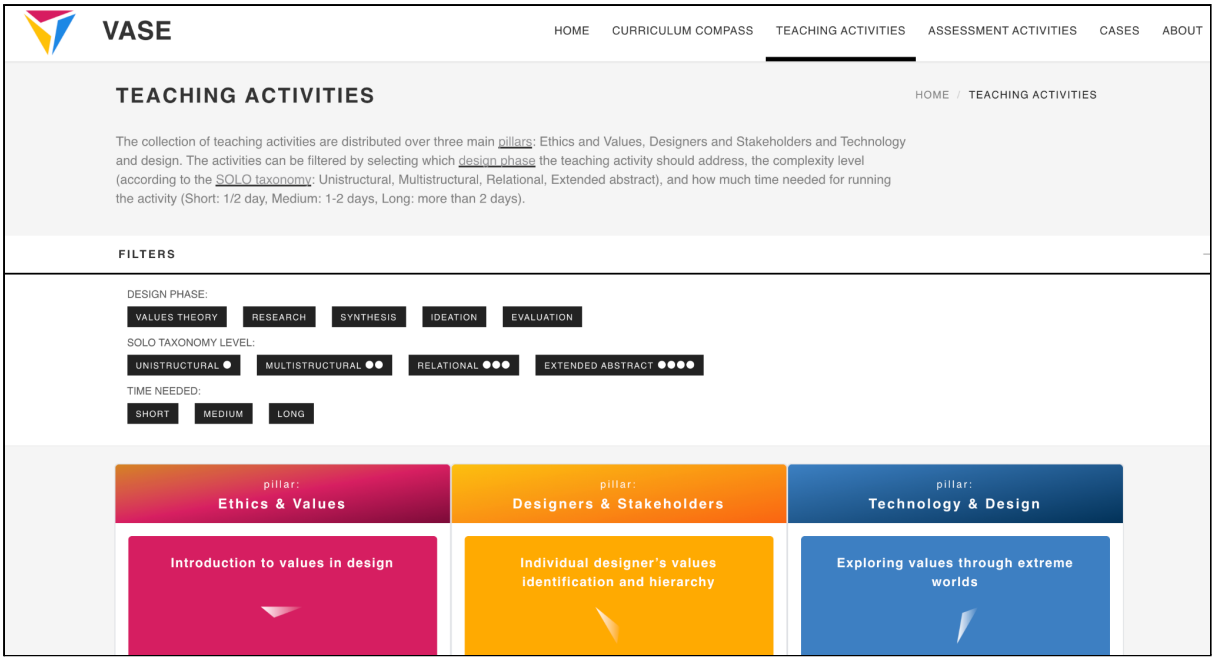



*Figure 14. The filtering mechanism which can be used by teachers for identifying relevant teaching activities.*

When clicking on a teaching activity a description of the activity is presented, including the background to the activity, the intended learning outcomes, step by step instructions for how to run the activity. A specification of which pillar, design phase, SOLO taxonomy level the activity belongs to is provided, as well as a time indication. The materials (slides, worksheets etc) that may be used when running the activity are linked. There are also links to the suggested assessment activities that can be used to assess whether the intended learning outcomes were attained. The description also includes suggested assessment criteria pointing out what the teachers can ask the students to focus on during the assessment. In case the teaching activity were used in any of the case descriptions included in the OER, links are provided to the relevant case.

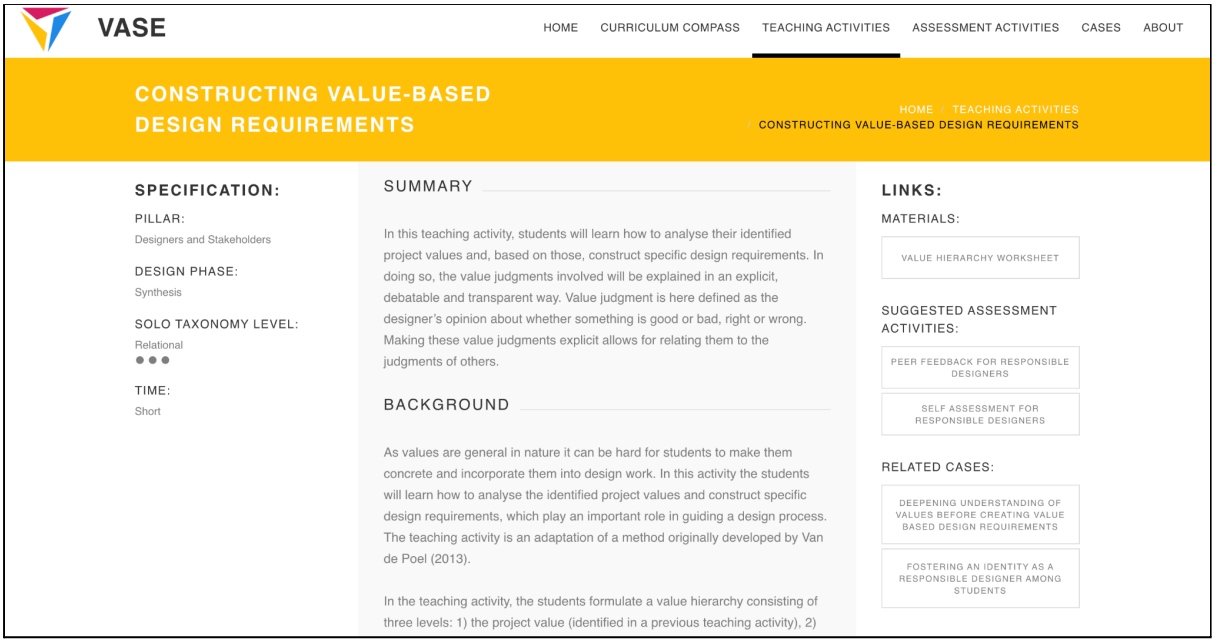



*Figure 15. The teaching activity description and links to further resources.*

**Assessment activities**

The section includes the 12 assessment activities providing summative, formative, ipsative and authentic assessment types, and presented in three columns representing three divided into the competency types: Knowledge, Skills and Attitudes (Figure 16). The introductory text provides links to further background information on the various assessment and competency types.

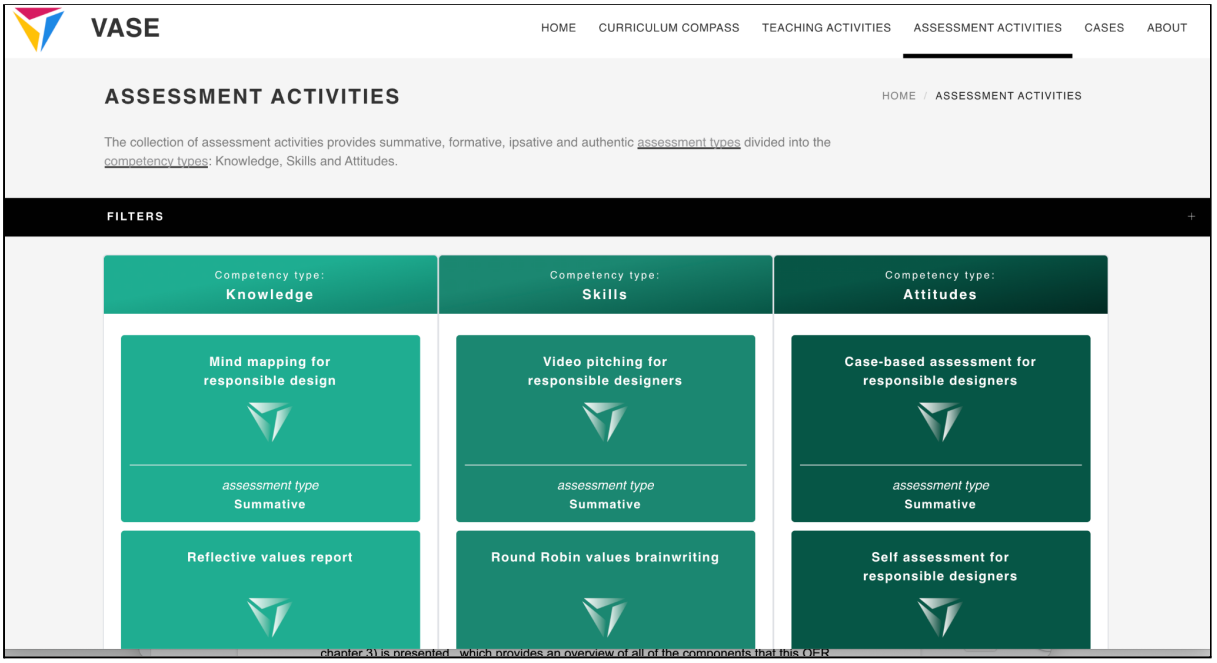



*Figure 16. Assessment activities distributed across the three three competency types.*

Also in this section, a filtering mechanism is offered for filtering the assessment activities by

selecting which assessment type and competency type the assessment activity should specifically address (Figure 17).

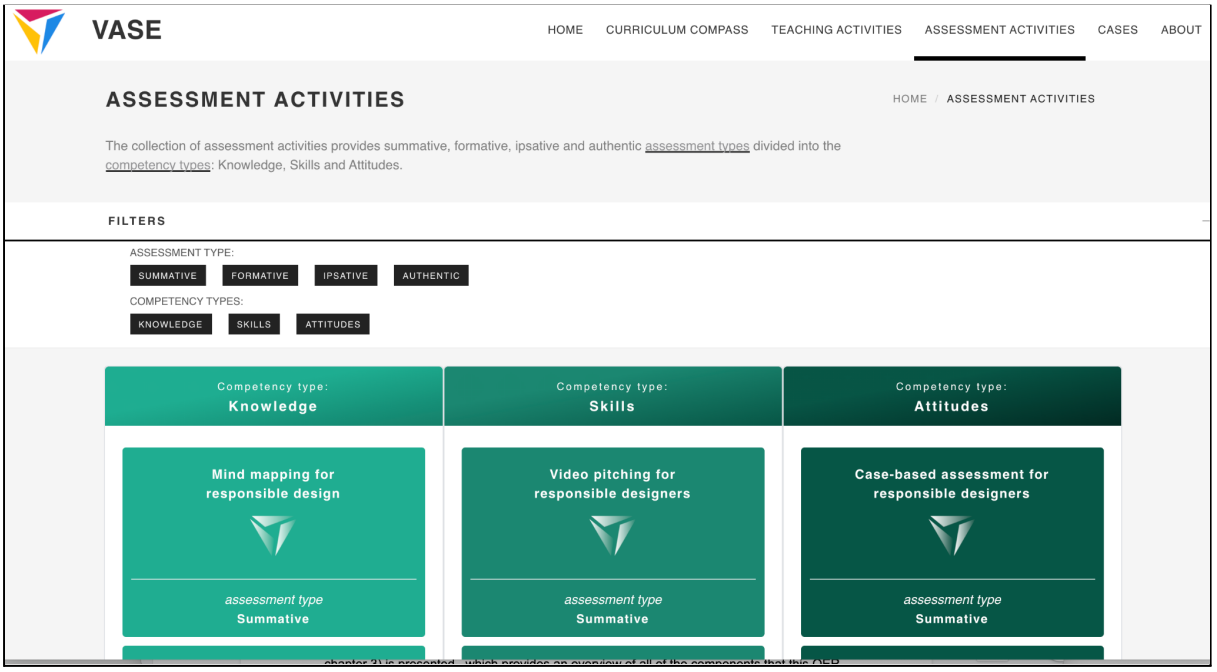



*Figure 17. The filtering mechanism which can be used by teachers for identifying relevant assessment activities.*

When clicking on an assessment activity a description of the activity is presented, including the background to the activity and step by step instructions for how to run the activity (Figure 18). There are also links to the teaching activities that this assessment activity is specifically relevant for, but the assessment activity can of course be used beyond these proposals. The description also includes proposals on focus points that the teachers may pay attention to when reviewing the outcome of the assessment.

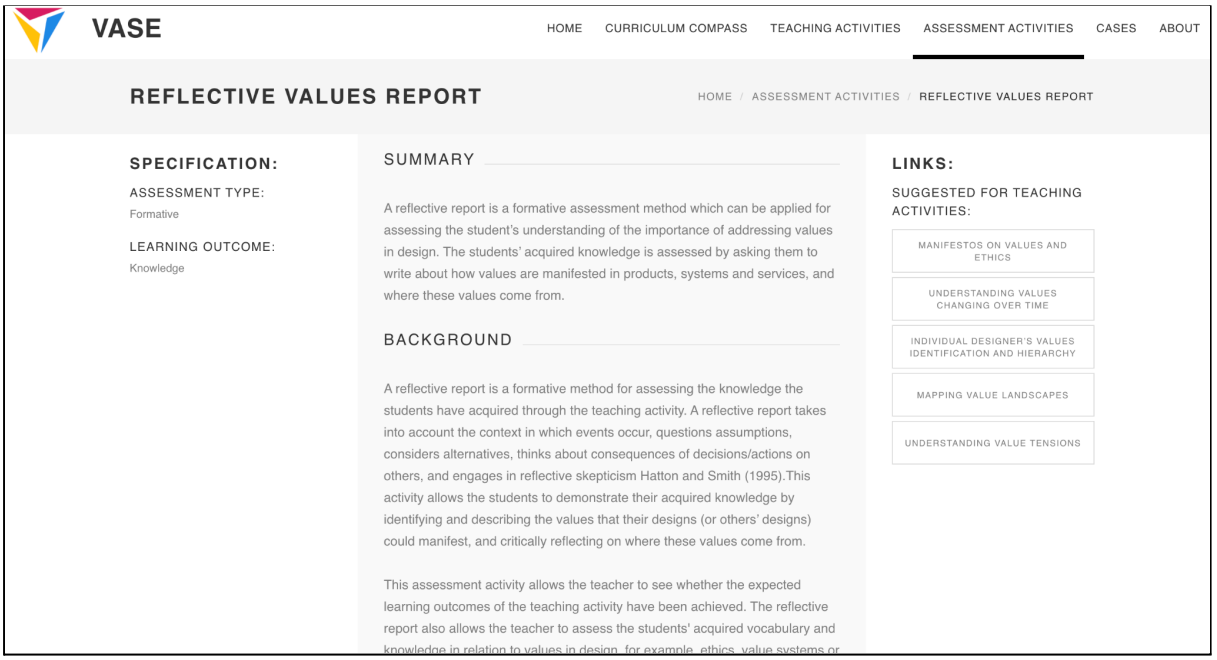


*Figure 18. The description of the assessment activity.*

**Cases**

This section presents eight case descriptions of how the teaching activities have been put into practice in the classroom and may serve as a source of inspiration for teachers.

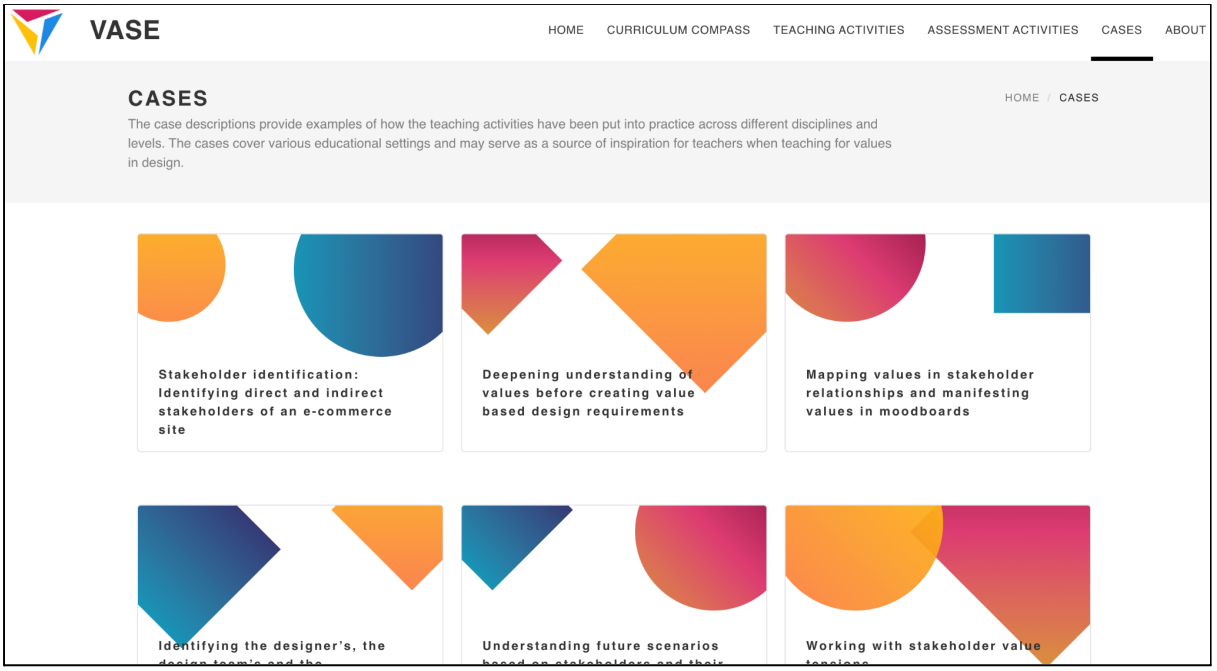



*Figure 19. The cases included in the OER.*

The case includes a description of how the teaching activity was carried out, the educational setting, time used and number of students who participated in the activity. There are links to specific teaching activities used, the materials (slides, worksheets etc) developed for this particular activity. In case the students developed any materials as part of the activity, examples of these outputs are also provided.

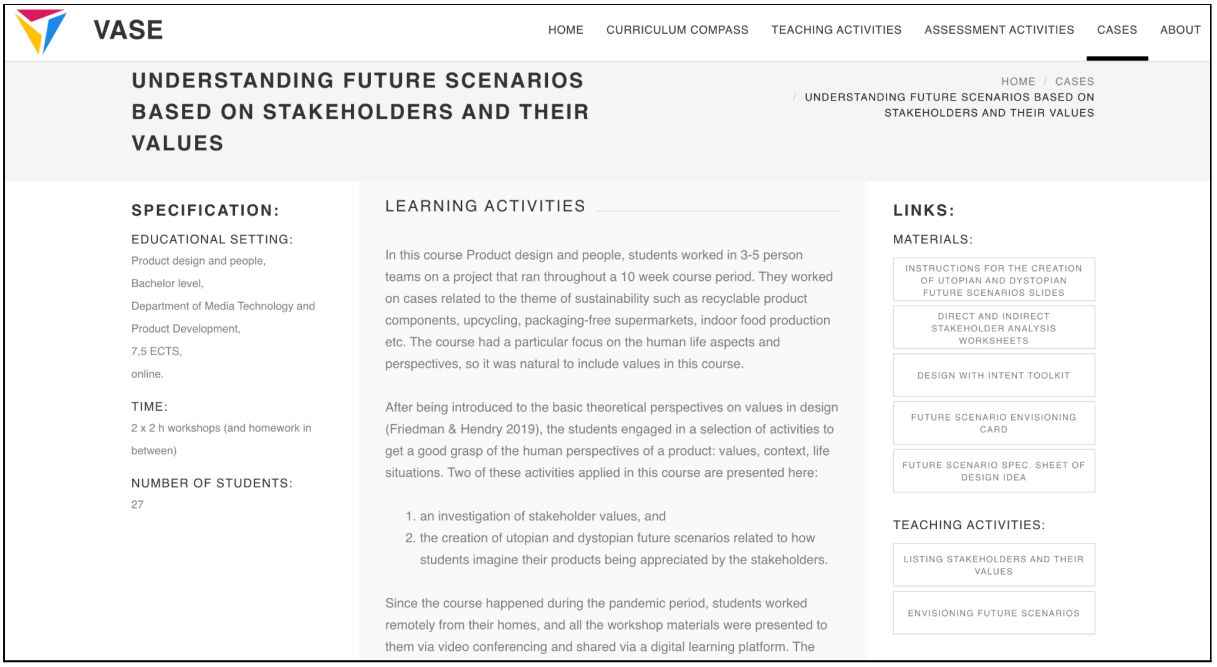



*Figure 20. The case description.*

**About**

The about section provides information about the VASE project, the partner universities that participated, and that it was co-funded by the Erasmus+ Programme of the European Union (which is also listed in the footer of each page). Links to the project website and the LinkedIN community “Teaching for values in design” are provided. All the names of the 13 participants and their affiliations are also listed.

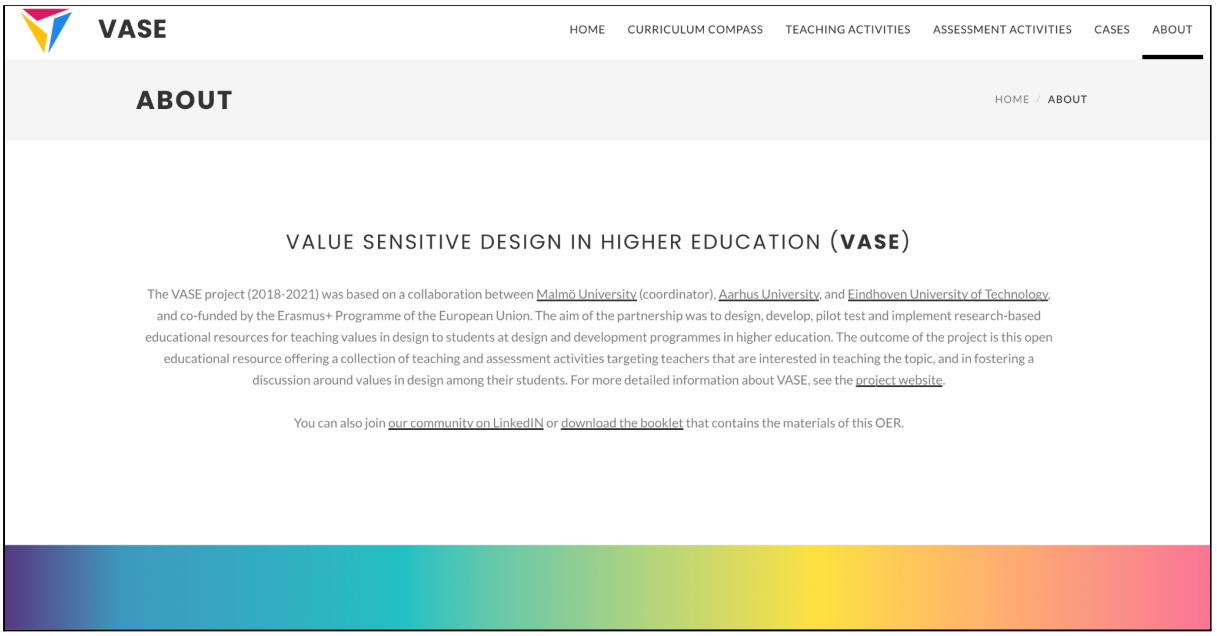



*Figure 21. The About page.*

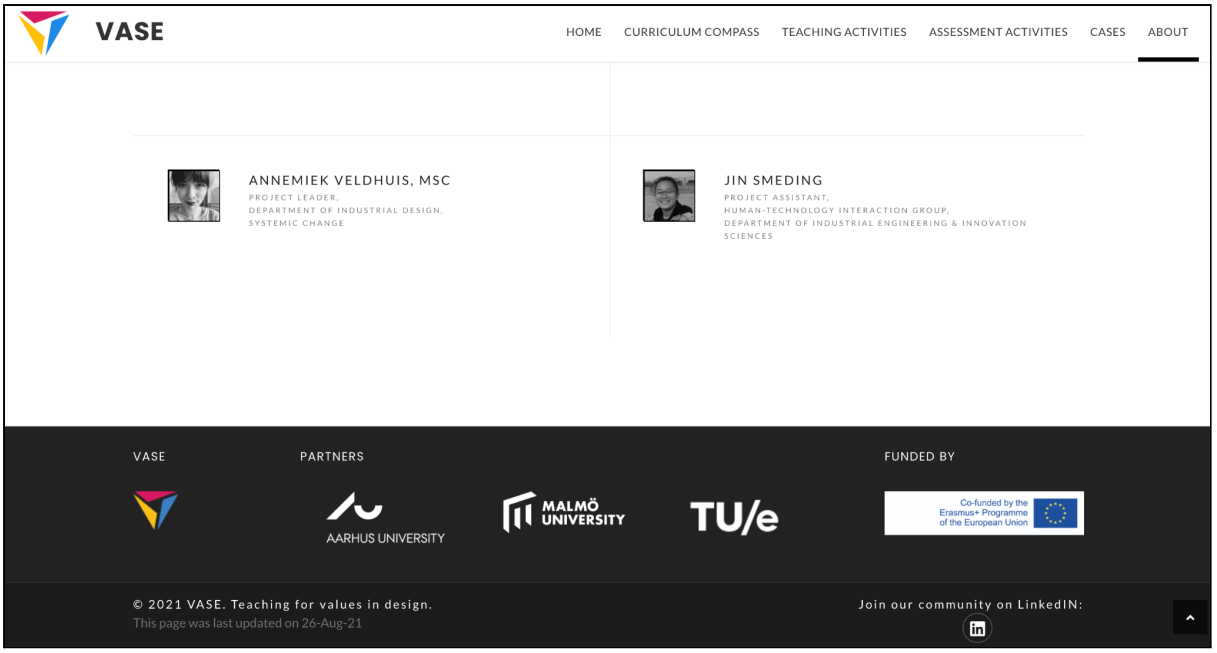



*Figure 22. The footer that appears on every page of the OER with information about the partner universities and the co-funding body.*

# Output 7: Report 3 – Transferability and sustainability plan

The report 3 (Barendregt et al., 2021a) is this document.

**VASE Report 3: Transferability and sustainability plan**
The report presents a summary of the project outputs delivered by the Erasmus+ project Value sensitive design in higher education (VASE). A model of the VASE pedagogical framework is presented, which visually illustrates all the components that the open educational resource (OER) developed as part of the project consists of. The report also includes a sustainability plan creating conditions for optimal use of the project's results beyond the project period. The report ends with a future scenario to imagine and analyse potential widespread consequences or societal impacts of teaching for values in design. The expected impact on the teachers taking part of this report is that they gain an overall understanding of the outputs of the VASE project, the different components that the OER consists of, how it can be used and where to access it. By accessing knowledge about how such teaching resources can be applied in educational settings they may obtain new pedagogical ideas for renewing their own teaching.

# E1: The multiplier event

Due to the restrictions caused by the Covid-19 pandemic, the multiplier event planned to be an event on site changed to an online event. A webinar was organised on August 26, 2021 where the OER was launched and discussed. An external expert panel was invited to discuss perspectives and reflections on teaching for values in design in higher education.

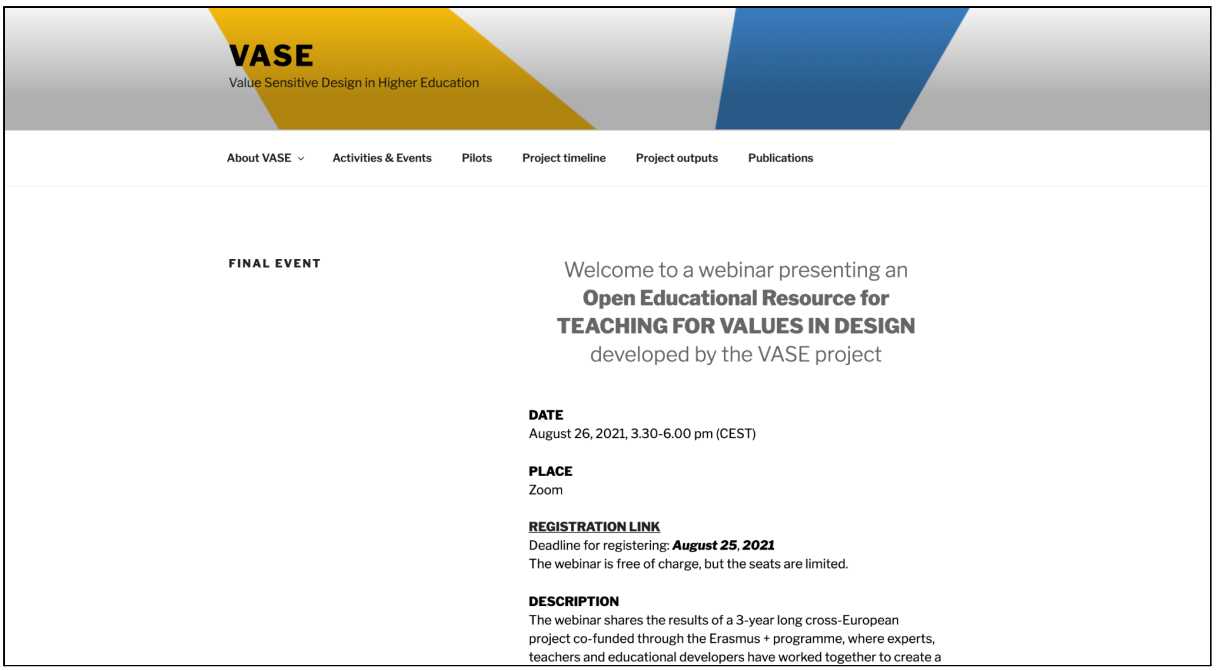



*Figure 22. The invitation to the event presented on the project web site.*

The invitation to the webinar that was sent via the partner universities' networks and communication departments.

Excerpt from the invitation text:

**Welcome to a webinar presenting an Open Educational Resource for TEACHING FOR VALUES IN DESIGN developed by the VASE project**

**DATE**
August 26, 2021, 3.30-6.00 pm (CEST)

**PLACE**
Zoom

**REGISTRATION LINK**
Deadline for registering: *August 25, 2021*
The webinar is free of charge, but the seats are limited.

**DESCRIPTION**
The webinar shares the results of a 3-year long cross-European project co-funded through the Erasmus + programme, where experts, teachers and educational developers have worked together to create a pedagogical framework aimed at helping teachers in higher education teaching for values in design.

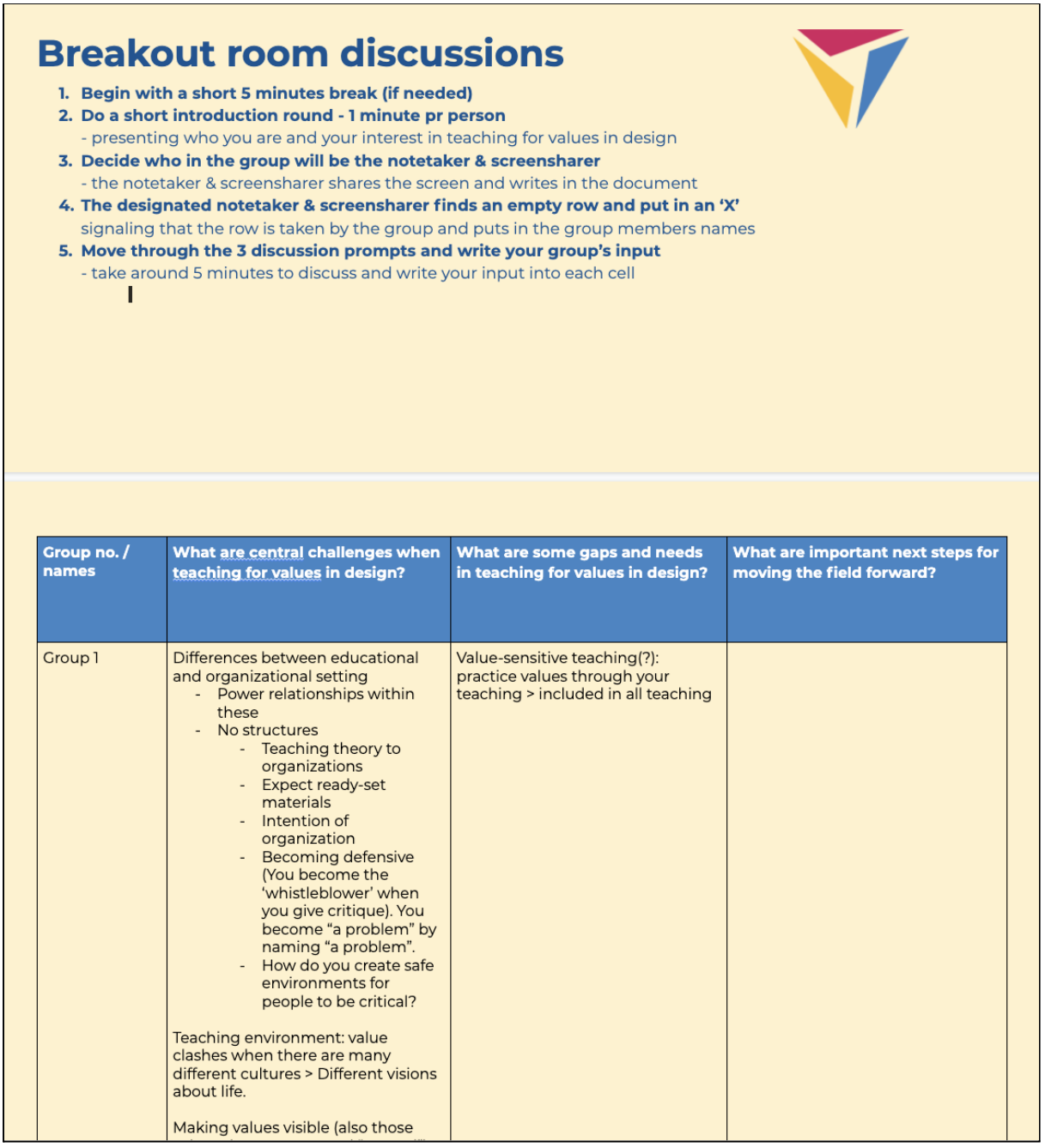
The main outcome of the project is an online Open Educational Resource – the VASE platform – containing a curriculum compass, 28 teaching activities, 12 assessment activities, case descriptions and additional resources to support teachers in educating students in becoming responsible designers. The materials have been iteratively developed and tested in 38 pilots involving 50 teachers and 1 563 students across four countries.

The 28 teaching activities are developed from the Curriculum compass. The Curriculum compass is a grid organised along the axes of three core competency pillars – Ethics and Values, Designers and Stakeholders, Technology and Design – and the SOLO taxonomy levels of understanding. The content of the grid consists of learning outcomes developed from seven overarching learning objectives originating from literature studies and expert practice. The Curriculum compass provides teachers with a concrete navigation tool which helps them select and combine teaching activities that facilitate both broad and deep learning pathways. All activities contain specific learning outcomes, concrete descriptions and materials, step-by-step instructions as well as suggested assessment activities that help teachers assess whether the learning objectives have been achieved and the competencies obtained.

The first part of the webinar will present the project, the VASE platform with its developed materials as one possible framework for how values in design could be taught. The second part of the webinar will open up for discussions on how to teach for values in design and move the field forward. The discussion will take what the VASE project “puts on the table” as a point of departure for identifying important gaps, possible ways forward and critical points to pay attention to. Results of the discussions will be captured and shared amongst the participants. The last part will consist of an external expert panel discussion on how to develop and frame teaching materials that aim at creating conditions for students to become responsible designers, along with stepping stones towards future paths of development.”

The program was divided into three sessions. Firstly, a presentation of the VASE project and the OER. Secondly, the participants were divided into breakout sessions where they were asked to identify potentials, critical gaps and future directions. Their discussions were documented in a joint online document (Figure 23). The session ended with a joint discussion in plenum.

Lastly, an expert panel consisting of three prominent persons representing the field of value in design were invited to reflect upon the OER and the discussions. The webinar ended with a social gathering in the same online space, where the participant could stay for some social networking and continued discussions and dialogue.



# Breakout room discussions

1. **Begin with a short 5 minutes break (if needed)**
2. **Do a short introduction round - 1 minute pr person**
   - presenting who you are and your interest in teaching for values in design
3. **Decide who in the group will be the notetaker & screensharer**
   - the notetaker & screensharer shares the screen and writes in the document
4. **The designated notetaker & screensharer finds an empty row and put in an 'X'**
   signaling that the row is taken by the group and puts in the group members names
5. **Move through the 3 discussion prompts and write your group's input**
   - take around 5 minutes to discuss and write your input into each cell

| Group no. / names | What are central challenges when teaching for values in design? | What are some gaps and needs in teaching for values in design? | What are important next steps for moving the field forward? |
|---|---|---|---|
| Group 1 | Differences between educational and organizational setting<br>- Power relationships within these<br>- No structures<br>- Teaching theory to organizations<br>- Expect ready-set materials<br>- Intention of organization<br>- Becoming defensive (You become the 'whistleblower' when you give critique). You become "a problem" by naming "a problem".<br>- How do you create safe environments for people to be critical?<br><br>Teaching environment: value clashes when there are many different cultures > Different visions about life.<br><br>Making values visible (also those | Value-sensitive teaching(?): practice values through your teaching > included in all teaching | |

*Figure 23. The first part of the joint document used for documenting the discussions in the breakout rooms.*

The program shared with the participants:

**PROGRAM (Times in CEST format)**
*Session 1*
**3.30-3.40 pm**: Welcome and presentation of the background, process and outcome of the project: A pedagogical framework for teaching for values in design in higher education
**3.40-3.55 pm**: Presentation of the pedagogical framework and the open educational

resource, https://teachingforvaluesindesign.eu/
**3.55-4.10 pm**: Q&A

*Session 2*
**4.10-4.45 pm**: Breakout room discussion (including break) on teaching for values in design – identifying potentials, critical gaps and future directions
**4.45-5.00 pm**: Plenum sharing of discussion points, ideas and insights across the groups

*Short break*

*Session 3*
**5.05-5.40 pm**: External expert panel discussion: perspectives and reflections on teaching for values in design in higher education
Panelists:
– Marie Louise Juul, Designer, feminist, postdoctoral researcher at The Oslo School of Architecture and Design (AHO) (NO)
– Caroline Hummels, Professor in Design and Theory for Transformative Qualities at the department of Industrial Design at the Eindhoven University of Technology (NL)
– David G. Hendry, Associate Professor, The Information School, University of Washington, University of Washington, co-director of the Value Sensitive Design Lab

**5.40-5.55 pm**: Questions from the audience

**5.55-6.00 pm**: Rounding off the event

**6.00-7.00 pm:** Social networking and continued discussion and dialogue (bring your favourite beverage and join us)."

At the webinar, an invite to the LinkedIn group "Teaching for values in design in higher education" was shared, which is a community of teachers that are interested in teaching their students about values in design and how to support them in becoming responsible designers (Figure 24). By joining the community the participants could stay in contact. All the materials from the webinar, the slides, the chat conversations etc were also shared on the LinkedIN community wall.

All of the presentations and the panel discussion at the webinar were video recorded (all participants gave their consent to record the sessions). The recordings were linked from the LinkedIN community wall offering people that could not attend the webinar to listen to the presentations afterward.

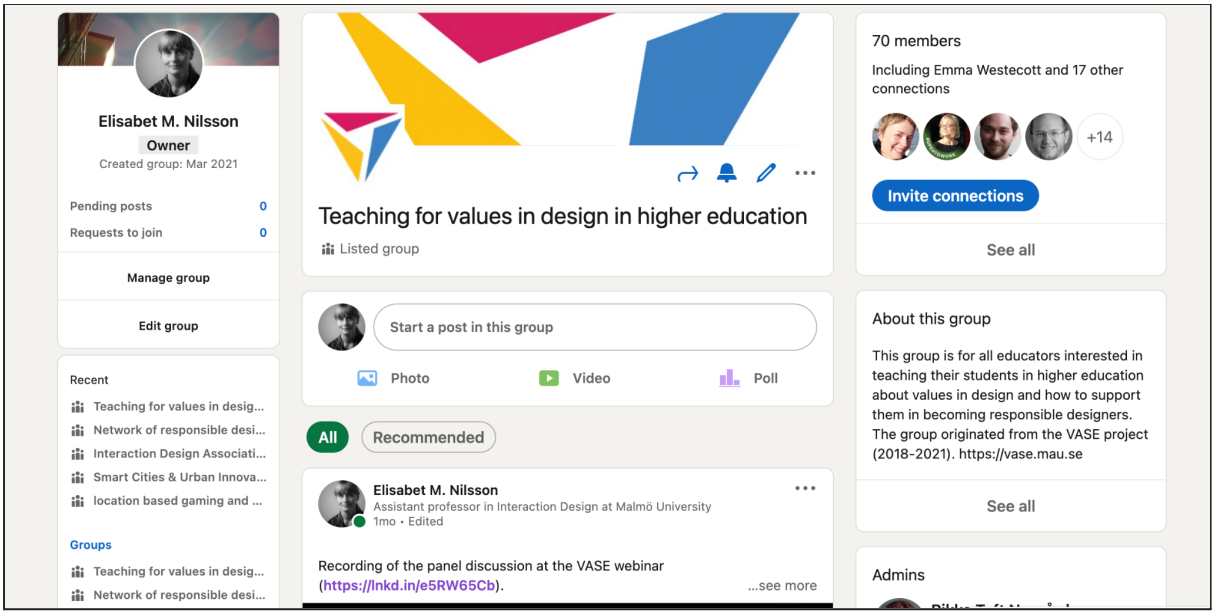



*Figure 24. The LinkedIN community "Teaching for values in design"*[2].

# 3. The VASE framework – transferring knowledge about how the OER can be used

The VASE framework on teaching for values in design (Figure 25) is a model summarising the five components that the OER builds upon:

- *Pillars*: three core competency pillars for educating responsible designers,
- *Learning objectives*: seven overarching learning objectives that guide teachers when teaching for values in design,
- *Curriculum compass*: the curriculum compass containing 20 learning outcomes which outline progression in learning design for values,
- *Teaching activities*: 28 teaching activities that expand, concretise, and integrate learning outcomes in step-by-step activities,
- *Assessment activities*: 12 assessment activities that are connected to relevant teaching activities to support teachers in checking whether the activities' learning outcomes were achieved by the students.

[2] LinkedIN community "Teaching for values in design": https://www.linkedin.com/groups/9043787/, accessed on 2021-10-17.

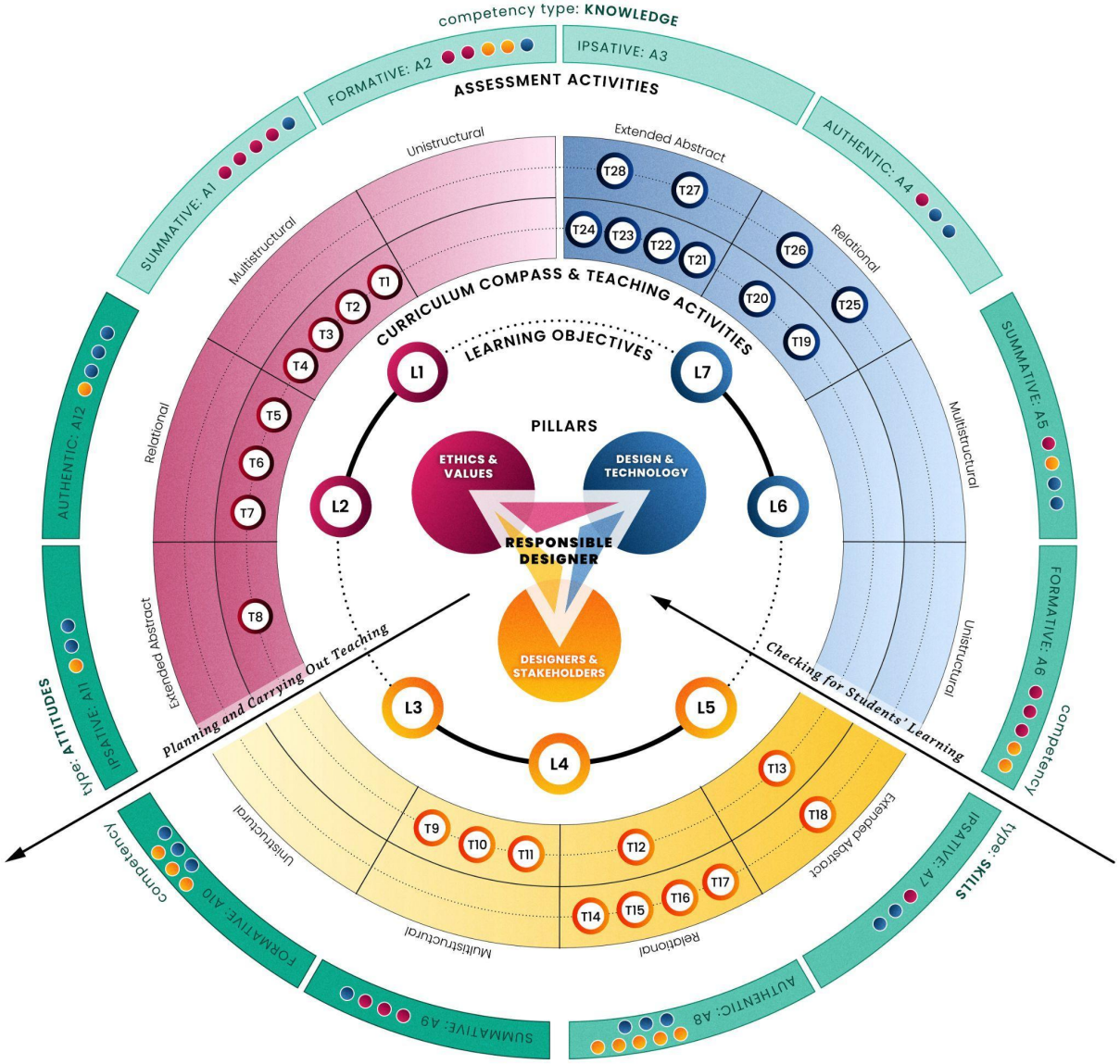



*Figure 25. The model of the VASE framework* – a pedagogical framework on teaching for values in design.

The model of the framework visualises how different components included in the OER can be configured and used by teachers to meet their own needs. The model can be used for transferring knowledge to teachers about the teaching resources made available on the OER can contribute to their pedagogical practices.

Excerpt from the book chapter “The VASE framework – a pedagogical framework on teaching for values in design in higher education” (Nørgård et al., forthcoming):

“The VASE framework can be used both as a reflective planning tool for teaching for values in design targeting specific competencies or learning outcomes, as well as an inspirational resource for insight into how one can teach for values in design on both beginner and advanced levels that can be adopted across different educational contexts. In this way, the VASE framework can, on the one hand, support teachers in systematically planning and carrying out teaching, and, on the other hand, help facilitate robust learning by giving teachers ways to assess and check for learning.

The model of the VASE framework (Figure 1) visualises the teachers' movement between the different dimensions of the framework when they are planning and carrying out teaching (moving from the centre and outwards) and are checking for students' learning (moving from the edge and inwards)."

"The VASE framework can be used to:

- *Select specific stand-alone activities*
  Teachers can explore the overarching learning objectives and select those that are the most relevant to their discipline, curriculum or course. The learning objectives are described in broad terms while the teaching activities connected to each of the learning objectives execute them in concrete ways.
- *Create in-depth learning pathways*
  Teachers can combine concrete teaching activities that move students from a simple (unistructural) to a complex (extended abstract) level of understanding of values in design within a specific pillar. Each of the three pillars represent core areas of teaching for values in design and integrating learning pathways in teaching allows students to build deeper knowledge, skills, and attitudes progressively to acquire a desired set of competencies within a specific pillar.
- *Give students a broad foundation*
  Teachers can combine concrete activities across all three pillars that create a broad foundation for students to become more responsible designers. Creating a broad foundation within a certain level of understanding allows students to develop a more holistic approach to values in design in relation to a select level of competence."

The model of the pedagogical framework is introduced on the entrance page (Home) of the OER, and aims at providing an overview and supporting teachers when navigating through the five components that the OER builds upon.

# 4. Sustainability plan

As part of the Communication strategy (Output 5) a sustainability plan was developed including strategies for optimal use of the project results beyond the project period.

The sustainability plan consists of the following actions:

- **Extended life time of the OER**
  To ensure that the OER is not deleted when the content is still relevant, the lifetime of the OER has been extended until the year 2028. The original plan (as listed in the application) was to sustain the OER only for four years (2024). However, we have experienced an increased interest in the topic of values in design since we first began to work on the project, we see no reason for shutting down the OER already in 2024. The partner university (TU/e) hosting the OER will ensure that the website is

administered in a safe and stable way for the years ahead.

- **Development of the VASE booklet**
  The descriptions of the teaching and assessment activities, case descriptions, introductory texts, background information etc., published on the OER have been compiled and turned into the VASE booklet in a pdf-format that can be downloaded from the OER (VASE, 2021a). The booklet links to the materials (slides, worksheets etc stored online on the OER), implying that the teachers that download the booklet must still return to the OER to download relevant materials. In addition, we have also developed a free-standing pdf version of the VASE booklet including all of the materials (slides, worksheets etc). This version is uploaded to the partners universities' various databases and online archives (such as the DiVA portal) to ensure that the project result is also made available after the OER is shut down (2028). These archives and databases are also connected to global search engines.

  Besides the content on the OER (which is developed to be published in a web format, that is, with short and concise formulations), the VASE booklet also includes extended texts about the theoretical framework behind the development of both the teaching and assessment activities and the curriculum compass.

- **Establishment of a global network of educators**
  The project has gathered a network of educators interested in teaching for values in design. To ensure that the network is maintained after the project has ended we have established a LinkedIN group that teachers that are interested in the topic can join. The LinkedIN platform demands limited maintenance work from the project members after the project has ended, which makes this doable and realistic solution for how to keep in contact. The network was established at the online multiplier event/webinar organized and currently consists of 66 members.

  During the project period we have also established contact with existing networks and communities, such as the VSD (Value Sensitive Design) community, which is an international community of researchers interested in the topic of value sensitive design, including names like Batya Friedman and Hendry David who are the pioneers of VSD[3] (and who also participated in the multiplier event/webinar). Another example is SEFI (European Society for Engineering Education), which is an international organisation considered as the largest network of engineering education players in Europe[4].

- **Development of scientific publications**
  Throughout the project period, peer reviewed scientific publications have been developed describing and reflecting upon the development of the teaching activities, the curriculum compass, and the assessment approach. The list of publications can be found in Appendix A, and on the VASE project website.

[3] The Values Sensitive Design Lab: https://vsdesign.org/, accessed on 2021-10-17.
[4] The SEFI web site: https://www.sefi.be/, accessed on 2021-10-17.

- **Participating in events, conferences and seminar**
  In order to spread awareness about the project and its deliverables, the project members have participated in various internal and external events, conferences, and seminars throughout the project period. A list of examples of such events can be found in the Appendix B, and on the VASE project website.

# 5. Envisioning future scenarios

One of the teaching activities included in the OER is about envisioning future scenarios in order to imagine and analyse potential widespread consequences, long-term effects and societal impacts of a design. To practice what we preach (or rather practice what we teach), we have also applied the envisioning method to demonstrate potential large-scale effects of our design, that is the OER and the teaching materials it offers. By understanding the potential consequences and effects of teaching for values in design, we have been able to identify important issues to pay specific attention to when teaching values in design. These insights are presented at the end of this chapter.

The following sections are excerpts from the paper “Envisioning large-scale, systemic effects of teaching values in design” (Kok et al., 2021) presenting two future scenarios describing potential long-term and large-scale effects on people and society of teaching about values in design.

“**Scenario 1: The Pioneer (Carol)**
Carol recently graduated from college and quickly managed to find work as a designer at a large company in the telecom sector. Most of Carol’s colleagues are many years older than she is. Carol thinks their approach is old-fashioned: no analysis of long-term societal effects of the design is requested and decisions are based purely on expected profit. But Carol’s education has instilled a sense of responsibility in her – she knows it’s the designer’s moral duty to consider stakeholders from the start and consider potential negative effects of the products she’s designing. Unfortunately, Carol’s manager doesn’t want to provide her with the time and budget to do this. Carol feels increasingly stressed because she wants to do right – it’s what’s expected of her, by her old teachers, by her friends from college, and by herself. She repeatedly tries to educate her colleagues about the importance of addressing values, which results in her becoming somewhat of an outcast within the team. But Carol feels like she can’t give up. She starts working unpaid overtime to be able to work with values in design. She keeps asking people from her personal network to help her out by giving stakeholder feedback, which is starting to put a strain on her relationships with friends and family. Her final designs are very successful, and Carol is proud of what she has achieved, but at what cost?

Ten years down the road, Carol has recovered from a severe burn-out. She could not cope with the feeling of responsibility to change an entire company’s approach on her own as a junior employee. After her burn-out, she took the time to try to find a company whose vision already matched hers. She succeeded and is now happily part of a younger team of designers. In the meantime, Carol’s old company has changed drastically. Even though Carol paid a high price for the changes she was trying to make, she demonstrated how

successful a values in design approach could be. After a while, her colleagues and even her manager couldn't deny that. After Carol fell sick, they thus started looking to hire another employee who knew about values in design. And within a few years, every single new hire had those skills; this was easy enough for the company, because values in design had become a standard ingredient in most design and engineering programs. Having several young voices within the company and a more open mind, the company made time and budget available to work with values in design. This approach was so successful that by now, the company refuses to hire any designer who does not know how to practice values in design.

**Scenario 2: The Critic (Dave & Erin)**
Dave, a designer without an education in values in design, comes up with the idea of developing a technology that would support parents when taking care of their infants. Together with Erin, a friend from college who has studied values in design, Dave gets into contact with a large international company that produces all sorts of baby care products and starts sketching ideas for supportive technologies. After a couple of years, this process results in a working prototype of a smart diaper that detects when it needs to be changed. The diaper status can be viewed using a mobile app, which also allows the parent who is not with the child to check on the status. During the process, Erin, coloured by what she was taught at university, starts to question the rationale behind the product and the values it is based upon. She recognises the trade-off between the ability to make informed decisions versus values such as intuition, trust, independence, and interdependence. She claims that the product sends the message that modern parents are incapable of communicating non-verbally with their children about their needs. She also fears that the system might create a sense of insecurity among parents. By using this technology, they might start to question their own capability to take care of their newborns and believe that they need technology to assist them instead of trusting their own instincts. Dave gets increasingly frustrated with Erin's criticisms, because it is delaying the release of the product. Dave continues to see great commercial potential in the product, and the company eventually decides to bring it to market.

It turns out that Dave was right: the product became a success. Just a couple of years later, the new standard is that parents check their smartphones for the status of their infant's diapers, instead of asking them in person, looking them into the eyes, and checking the diaper by lifting up the child. The parent-child relationship is mediated by this "smart" technology. The infant misses out on the opportunity to learn how to communicate needs, since the technology takes care of that kind of communication with the parents. Erin realizes that her initial ambition when she joined forces with Dave – to do good and support parents – has failed, and that the company failed in analysing the long-term societal consequences of their design. Erin starts a movement reclaiming the rights for parents to follow their instincts instead of relying on technologies that create a distance between them and their children." (Kok et al., 2021, p. 62)

By creating the future scenarios we envisioned potential implications and consequences of teaching for values in design, and how the students may be affected by this teaching. The future scenarios also demonstrate that the individual classroom outcomes are not the only

important consequences of one's teaching, and how education shapes students continues to play out beyond the classroom and throughout their professional lives.

In the paper (Kok et al., 2021) we have translated the insights gained from the envisioning activity to concrete improvements on our teaching, and issues that we should pay attention to. The following sections are excerpt from the paper (Kok et al., 2021, p. 64):

**"Calibrate expectations and ambitions**
We should *protect our students from biting off more than they can chew*. Values is a topic that may evoke strong emotions in a person and as such, it may drive students' motivation (Schwartz, 2012). Carol's scenario illustrates the risks of students being overly ambitious, and while we should foster their self-esteem, we should also manage their expectations. This is especially relevant for the first generation(s) of students in values in design. One opportunity to do this is through internships, during which students often get their first insight into the job market and corporate culture. Teachers can guide students in how to balance their ambitions of being responsible designers with the reality in actual practice. In the transition from a focus on considering stakeholder values in student projects to facing the practices of traditional corporate cultures, there might be a clash, as the role of values in design might not be prioritized, or even known in the company. The role of the teacher, then, is to help the student to not take on a responsibility to change the whole work culture, or even make a point of this way of thinking – but rather to try to set an example, to the degree this is possible within the company and, most of all, within the boundaries of the mental health of the student.

In addition, we should *protect ourselves as teachers from being overly ambitious.* Dave's scenario demonstrates that it only takes one designer to bring a product to market that *isn't* designed according to the principles of values in design. Ideally, we would like to reach all design and engineering students with our teaching and create conditions for all students to understand the importance of values in design (e.g., by teaching its background and purpose rather than only its methods). At the same time, we must also learn to accept that we cannot reach everyone, and that some students or designers may be uninterested in or disagree with our methods.

**Reduce the discrepancy between education and industry**
Industry might not be prepared to receive a whole generation of designers who want to work with values in design. Carol's scenario demonstrates that current professionals may be reluctant to change their ways of working, at least initially. As teachers, we can help facilitate the transition in two ways.

First, we should *create conditions for industry to learn about values in design*. This can be done by offering further education for people already working in industry, and through further outreach to industry and alumni through workshops and exhibitions. The role of values in design could be highlighted in discussions with the reference group that many educational programs have, which typically consists of people from industry. Also, thesis proposals about values in design could be developed in collaboration with industry.

Second, we should *prepare students to deal with resistance when introducing values in*

*design (and the critical thinking that comes with it) to others.* Both scenarios show that other designers may not always be open or susceptible to criticism regarding values in design. To give students as many tools as possible to overcome such resistance, we should teach them how to demonstrate and explain to others the importance and benefits of working with values in design. This means a curriculum shouldn't focus exclusively on applying methods for working with values in design, but also on communicating the underlying motivations and advantages.

**Foster a culture of responsible design long-term**

Aided by this emphasis on communication, we should aim to *create a culture of questioning each other's designs and listening to each other*. Dave's attitude towards Erin's concerns is not the one we want to instil in our students. Instead, we should encourage critical thinking and teach students how to handle criticism of their own work as well as how to provide constructive criticism to others. One way of doing this is to introduce students to methods for running design critique sessions (Baumann, 2004) that specifically address values. In doing so, students learn to put into words the relevant aspects of their own and others' designs from a values perspective. They build a value vocabulary which they can use for communicating in a nuanced and grounded way when they critique design proposals. Achieving this kind of culture within the design community will require a "critical mass" of responsible designers who are both interested in and capable of initiating and running such conversations. We can look to the previously mentioned avenues to spread awareness about values in design both in industry and in education to help achieve this.

**Make education inclusive and open**

As much as possible, we should *make teaching materials publicly available*. Carol's scenario shows that those who do not have an education in values in design may eventually experience negative consequences (e.g., trouble finding a job). As a result, we should make the threshold for teaching and learning about values in design as low as possible. This can be done by making teaching materials available for free, and additionally, by offering case studies and testimonials from other teachers to be used as guidance and inspiration. This is something we already aim to do through the open educational resource we are developing. To further promote teaching values in design, we could initiate a professional teacher network on teaching values in design, to allow teachers to exchange ideas and spread the word. In addition, we could offer free online courses or make the teaching materials easily adaptable for self-study, to also allow individual students to pursue an education in values in design, even when this is not part of their curriculum or when they cannot afford to take a course."

These insights may serve as valuable input to other design teachers when taking on the challenge of addressing values in their teaching. These insights may also serve as a foundation when developing future research topics to be explored.

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# Appendix A: List of publications

See https://vase.mau.se/publications/ for additional publications (not published when this report was published).


Nørgård, Rikke T.; Nilsson, Elisabet M.; Eriksson, Eva; and Yoo, Daisy (forthcoming). *The VASE framework – a pedagogical framework on teaching for values in design in higher education.* Delft, NL: TU Delft Open.

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Nilsson, Elisabet M.; and Hansen, Anne-Marie (2021). Teaching for values in design – creating conditions for students to go from knowledge to action. In proceedings of *LEARNxDESIGN 2021: 6th International Conference for Design Education Researchers Engaging with Challenges in Design Education*, Shandong University of Art & Design, Jinan, China, 24–26 September 2021.

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Nilsson, Elisabet M.; Barendregt, Wolmet; Eriksson, Eva; Hansen, Anne-Marie; Nørgård, Rikke T.; & Yoo, Daisy (2020). The Values Clustering Teaching Activity – a Case Study on Two Teachers' Appropriations of Open Educational Resources for Teaching Values in Design. In proceedings of *the 11th Nordic Conference on Human-Computer Interaction: Shaping Experiences, Shaping Society* (NordiCHI'20), October 25–29, 2020, Tallinn, Estonia. ACM, New York, NY, USA, 13 pages. https://doi.org/10.1145/3419249.342123

Barendregt, Wolmet; Nilsson, Elisabet M.; Yoo, Daisy; Nørgård, Rikke T.; Bekker, Tilde; Veldhuis, Annemiek; Eriksson, Eva (2020). Teaching Values in Design in Higher Education – Towards a Curriculum Compass. In proceedings of *Conference on the Ethical and Social Impacts of ICT – Ethicomp 2020*. Rioja, Spain.

Eriksson, Eva; Yoo, Daisy; and Nilsson, Elisabet M. (2020). In-Action Value Framework–Participatory Design with Values. Position paper at *Participatory Design conference 2020,* Conference workshop: Computing Professionals for Social Responsibility: The Past, Present and Future Values of Participatory.

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Hendry, David G.; Eriksson, Eva; Fernando, Anisha Thilini Jessica; Shklovski, Irina; and Yoo, Daisy (2020). Value Sensitive Design Education: State of the Art and Prospects

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Van Mechelen, Maarten; Baykal, Gökçe Elif; Dindler, Christian, Eriksson, Eva; and Iversen, Ole S. (2020). 18 Years of Ethics in Child-Computer Interaction Research: A Systematic Literature Review. *Acm Interaction Design and Children* (Conference).

Eriksson, Eva; Iversen, Ole S.; Baykal, Gökçe Elif: Van Mechelen, Maarten; Smith, Rachel; Wagner, Marie-Louise; Vognstrup Fog, Bjarke; Klokmose, Clemens; Cumbo, Bronwyn; Hjorth, Arthur; Have Musaeus, Line; Graves Petersen, Marianne; Bouvin, Niels Olof (2019). Widening the scope of FabLearn Research: Integrating Computational Thinking, Design and Making.In proceedings of ACM FabLearnEurope, Oulo, Finland.

# Appendix B: Events, conferences and seminars

**Webinar for presenting  an Open Educational Resource for Teaching for Values in Design** organised by the VASE project (August 26, 2021)

**LearnXDesign 2021**
Paper presentation: Teaching for values in design – Creating conditions for students to go from knowledge to action (Nilsson & Hansen, 2021).

**Nordes Design Research conference Matters of scale**
Paper presentation: Envisioning large-scale, systemic effects of teaching values in design (Kok et al., 2021)

**Ethicomp 2021 conference**
Paper presentation: Teaching values in design in higher education – towards a new normal (Eriksson et al., 2021)

**NordiCHI'20 – Shaping Experiences Sharing Society**
Presentation of the case study article: The Values Clustering Teaching Activity – a Case Study on Two Teachers' Appropriations of Open Educational Resources for Teaching Values in Design (Nilsson et al., 2020)

**Ethicomp 2020 conference**
Paper presentation: *Teaching Values in Design in Higher Education – Towards a Curriculum Compass* (Barendregt et al., 2020).

**Participatory Design conference 2020**
Conference workshop: *Computing Professionals for Social Responsibility: The Past, Present and Future Values of Participatory Design,*  Eva Eriksson presented the VASE workshop position paper: In-Action Value Framework– Participatory Design with Values  (Eva Eriksson, Daisy Yoo and Elisabet M. Nilsson)

**Ethicomp 2020 online conference panel**
*Value sensitive design education: State of the part and prospects for the future* moderated by Daisy Yoo, VASE/Aarhus University. Panel consisted of Eva Eriksson, VASE/Aarhus University together with David G. Hendry, University of Washington (USA), Anisha Thilini Jessica Fernando, University of South Australia (Australia), Irina Shklovski, IT University of Copenhagen (Denmark), Dylan Cawthorne, University of Southern Denmark, and moderated. See the panel online.

**Teaching Design for Values Workshop**
Faculty of Architecture and the Built Environment at TU Delft

**Scandinavian Value Sensitive Design meeting**
Pesentation of the VASE project: *The Curriculum Compass* at the University of Southern Denmark in Odense (DN) (Eriksson and Yoo)

**International Value Sensitive Design quarterly seminars**
Presentation of the VASE project: *Teaching Values in Design (Eriksson)*

**Game.Play.Design: Values at Play**
International 3-week MA course at Aarhus University where 40 students from different disciplines and universities worked in groups to explore how value sensitive design and the values at play framework might enable them to develop innovative designs for Dokk1 in Aarhus, its children, youngsters, parents, visitors and future users. 8 groups created 8 different game designs and technological playgrounds working with the values at Dokk1 and its stakeholders.

**Designmesse @ Dokk1O**
Master students in Experience economy at Aarhus University exhibit their semester projects in design. The projects focus on value-sensitive design in the south part of the harbour of Aarhus, an urban area in heavy transformation. The projects run in collaboration with Kulbroens venner.

**Open research webinar**
International webinar exploring value sensitive design in education among other topics, and hosted by MA students in ICT-based Educational Design at Aarhus University

**Human Value in Design**
Guest Lecture: Teaching Values in Design: The VASE project. Eindhoven University of Technology

**(Dis)Empowering Technologies**
Panel at SummerPiT on Value Sensitive Design. Aarhus University