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TEACHING FOR VALUES IN DESIGN

Creating conditions for students to grow into
responsible designers and developers of
future technologies



AARHUS UNIVERSITY



MALMÖ
UNIVERSITY



This publication compiles the teaching materials published on the open educational resource “Teaching for values in design : Creating conditions for students to grow into responsible designers and developers of future technologies”. <http://teachingforvaluesindesign.eu>

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

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INTRODUCTION

This publication is a compilation of the teaching materials published on the online open educational resource “Teaching for values in design: A collection of teaching and assessment activities for teachers in higher education” targeting teachers in design and engineering programs in higher education. It is a complete pedagogical framework (the VASE framework, Figure 1) offering a collection of 28 teaching activities, 12 assessment activities and inspiring case descriptions of the various activities in use. The collection is organised into a curriculum compass which outlines the learning progression.

The teaching materials were developed by the project Value Sensitive Design in Higher Education (VASE), which is based on a collaboration between teachers, researchers, and educational developers at Malmö University (SE), Aarhus University (DK), Eindhoven University of Technology (NL), and University of Gothenburg (SE). The teaching materials have been iteratively developed and tested in 38 pilots involving 50 teachers and 1 563 students across four countries. For more information about the theoretical background, the methodology and development of the framework, see publications developed by the VASE partners.

¹ Teaching for values in design: A collection of teaching and assessment activities for teachers in higher education, <https://teachingforvaluesindesign.eu/>

² For more information about the development process and the pilots, see the publications: <https://vase.mau.se/publications/>

Why teaching for values in design?

Ethics and values are embedded in all technologies and affect our society on many different levels, from individual perspectives to large-scale societal effects (Friedman & Hendry, 2019; Nathan et al., 2008; Tromp et al., 2011). Designers and developers of technologies thus play an important role in shaping the society and ought to take responsibility by reflectively considering and intentionally working with values and ethical implications of their designs.

The importance of creating stronger awareness of the role that values play in the design and development of technologies has been emphasized by several initiatives such as value sensitive design (Friedman & Hendry, 2019), values in design (Nissenbaum, 2005), values at play (Belman et al., 2009), and values-led participatory design (Iversen & Leong, 2012). These initiatives have primarily been established for research and development purposes, aimed at offering methods for practitioners to intentionally and practically work with values in their design processes. However, not only the practitioners but also design and engineering students should learn how to work with values to become responsible and ethical developers of future technologies. In response, the VASE framework was developed, to offer teaching materials and resources that support teachers who are interested in addressing the role values play in design as part of their pedagogical practices. In doing so, they create conditions for students to grow into responsible and ethical designers of future technologies.

What do we mean with values?

Values play an important role in design, but there are many different ways to consider values. As part of the VASE project, a literature review of values in design was developed in which many of these different notions of values were encountered (Bekker et al., 2019).

When teaching students about values in design we need to disentangle these different notions and consider different teaching methods for each of the relevant notions. Through the literature review, we identified three axes that can help disentangle values.

Axis 1: Value or Values

As several authors have pointed out (e.g., Bekker 2019, Cox 2018), there is a difference between the meaning of the word “value” and the word “values”. “Value” often refers to the worth of something, whereas “values” refers to what is important in life. The objective view of “having value” can be linked to an economic view of value, whereas the subjective view of “being of value” can be linked to a sociological view of value.

Teaching for values in design

Concepts and definitions of value in the context of innovation have thus been explored in economy, psychology, sociology and ecology (den Ouden, 2012). This use of the word “value” is closely connected to how “value” was initially used by Cockton (2006), and which was later renamed to “worth”, meaning what a technology brings to its end-users.

The teaching materials developed by the VASE project address values as what is important in people's lives. What we mean by this, is that we aim to teach students to take responsibility for their own values, and how their designs can support or undermine other stakeholders' values (where other stakeholders can be defined in the broadest sense, such as end users, society, but also e.g., nature).

Axis 2: Focus on the process or the product

In the design context, values can be connected to either the product of design or the process of design contributing to values or expressing values. The notion that values can be embodied in design, as expressed by Friedman and Kahn (2003) relates to the product's values, while the notion of empowerment, which forms the basis of participator design (PD), also relates to the process' values. Of course, values also underlie the ethical framework for doing design and research in general, making sure that stakeholders are treated with respect.

Axis 3: Focus on designers' value(s) or stakeholders' value(s)

We can consider values not only from the perspective of the designers, but also from the perspective of the stakeholders. In other words, to be sensitive to values, designers need to be aware of their own values, as well as the values of various stakeholders. As den Ouden (2012) pointed out, stakeholders may exist on many different levels, from users, to organisations, to the society, and to the ecosystem. Therefore, designers need to make decisions about potential value conflicts between and within different stakeholders.

THE VASE FRAMEWORK

a pedagogical framework on teaching for values in design

The VASE framework for teaching values in design in higher education builds on three core competency pillars: I) Ethics and Values, II) Designers and Stakeholders, III) Technology and Design, and seven overarching learning objectives. Building on this, a Curriculum compass, outlining core competencies to become responsible designers was developed.

The VASE framework model (Figure 1) provides an overview of all of the components that it builds upon (pillars, learning objectives, curriculum compass, teaching activities and assessment activities). It visualises how the different components offered can be configured and used by teachers to meet their specific needs.

In this way, the VASE framework may 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 students' learning (Nørgård et al., forthcoming).

The components of the VASE framework are:

- *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.

Teaching for values in design

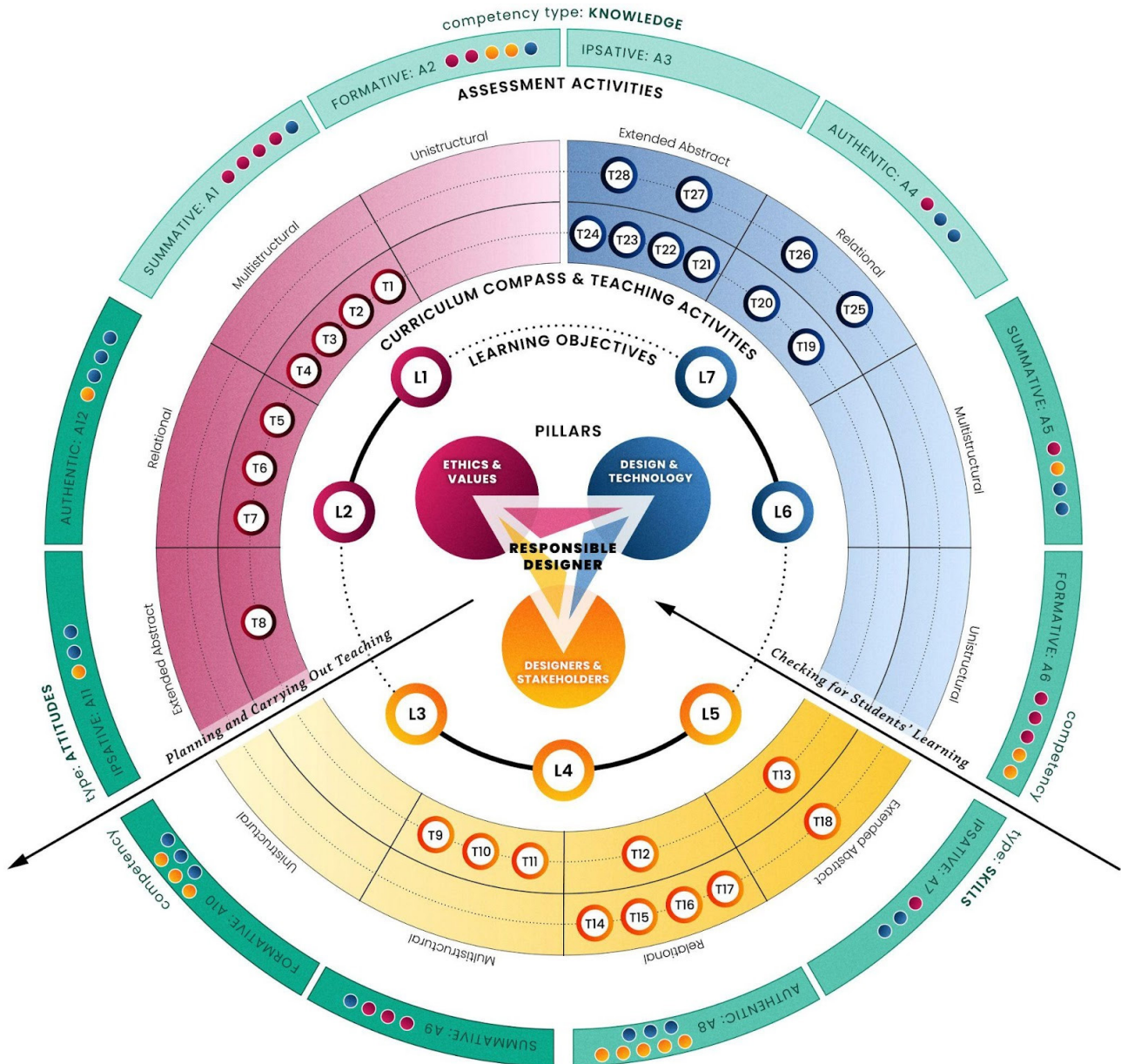


Figure 1. A model of the VASE framework – a pedagogical framework on teaching for values in design.

THE CURRICULUM COMPASS

The curriculum compass (Figure 2) functions as a navigation and planning tool for teachers. It is developed to assist teachers in selecting teaching activities that support students in attaining specific learning outcomes. As a navigation and planning tool, the curriculum compass connects a broad range of learning outcomes, each with a set of concrete teaching activities. Teaching activities are furthermore connected to suggested assessment activities that support teachers in judging whether the learning outcomes were achieved.

Combined, the different cells of the curriculum compass aim to develop students' knowledge, skills and attitude on multiple levels so that they can grow into well-rounded, responsible designers.

Teachers can use the curriculum compass to:

- select specific stand-alone activities,
- create in-depth learning pathways, or
- give students a broad foundation.

Stand-alone activities: Teachers can explore the different learning outcomes of the curriculum compass to select teaching activities that are most relevant for their own discipline, curriculum or module. Each cell of the curriculum compass contains a specific learning outcome with a set of concrete teaching activities for achieving it.

Learning pathways: Teachers can combine a horizontal string of teaching activities to configure a learning pathway

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within a specific pillar. Each pillar represents a core area of teaching values in design. Integrating learning pathways in teaching allows students to build deeper knowledge, skills and attitudes as they move from a simple (unistructural) to a complex (extended abstract) level. Students can progressively acquire a desired set of competencies within a specific pillar.

Broad foundations: Teachers can combine a vertical string of teaching activities across all three pillars to 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.

Overall, these learning outcomes are topically distributed over three core competency pillars, temporally distributed over design phases, and organised in order of levels of competence using the SOLO taxonomy to visualise how students' understanding of values in design develops from a simple to more complex level throughout the design process and across the three pillars.

Teaching for values in design

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.
		<i>This is taught as part of higher-level patterns.</i>	1: Introduction to values in design 3: Introduction to cultures and values in design 7: Values clustering for developing students' value vocabularies	2: Introduction to ethics in design 6: Values manifested in products, system and services 5: Manifestos on values and ethics 8: Understanding values changing over time	4: Design with and for certain philosophies
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.
		<i>This is taught as part of higher-level patterns.</i>	9: Individual designer's values identification and hierarchy 10: Design team's values identification and hierarchy 12: Listing stakeholders and their values	13: Stakeholder values elicitation	14: Mapping stakeholder value landscapes
	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.
		<i>This is taught as part of higher-level patterns.</i>	<i>This is taught as part of higher-level patterns.</i>	11: Design team's value statement manifesto 15: Project values identification 16: Value-based reformulation of the design draft 18: Constructing value based design requirements	17: The game changer

Teaching for values in design

Pillars	Design Phase	Solo Taxonomy Level			
		Unistructural	Multistructural	Relational	Extended Abstract
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.
		<i>This is taught as part of higher-level patterns.</i>	<i>This is taught as part of higher-level patterns.</i>	19: Visualising values in design with moodboards 20: Understanding value tensions	21: Identifying and resolving value tensions 22: Exploring values through extreme worlds 23: Re-designing for different cultures 24: Envisioning future scenarios
	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.
		<i>This is taught as part of higher-level patterns.</i>	<i>This is taught as part of higher-level patterns.</i>	26: Evaluating values in the final design with stakeholders. 27: Public examination of values in design	25: Contextualising values through reflection in action 28: Design after evaluation

Core competency pillars

The curriculum compass uses three core competency pillars to structure the teaching activities: Ethics and Values, Designers and Stakeholders, 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.

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

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

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

Design phases

The three core competency pillars cover various parts of the design process: Value theory providing background knowledge, Research, Synthesis, Ideation, and Evaluation.

Value Theory

Background knowledge

This meta-design phase is important for students who are about to start designing with values. Through teaching activities in this phase, students gain theoretical base knowledge of different approaches and frameworks for ethics and values in design. Building on this theoretical understanding, the students will be able to carry out the activities in the following phases more effectively.

Research

Insight into the problem

In this phase, relevant information is gathered around the initial design brief. This includes information regarding direct and indirect stakeholders, their values and the relationships and tensions between them. The values of the designers (students) themselves are also analyzed and reflected upon.

Synthesis

The area to focus upon

In this phase, research findings are clustered. Insights evolve and potential areas of opportunity are identified. Students build the foundation to frame and specify the initial design brief.

Ideation

Potential solutions

In this phase, students generate value-sensitive ideas based on their reframed design brief through different ideation activities. Moreover, students choose ideas to produce in the form of prototypes.

Evaluation

Solutions that work

In this phase, students test their prototypes with a focus on values. The values are embodied in the prototypes, and, one by one, are investigated together with stakeholders and reflected upon in order to improve the design solutions.

SOLO Taxonomy Levels

The Structure of the Observed Learning Outcome (SOLO) taxonomy (Biggs, 2003) is a five-tier hierarchical framework for structuring learning outcomes. The SOLO taxonomy provides a tool for defining curriculum objectives, intended learning outcomes, and evaluating learning outcomes based on these objectives.

Progression can be defined as moving up in SOLO levels, from unistructural, to multistructural, relational, and up to extended abstract level as the highest level. Each level in the SOLO taxonomy is represented by a number of verbs that can be used to formulate learning goals, as in the curriculum compass.

Unistructural

One aspect of a task is picked up or understood serially, and there is no relationship of facts or ideas.

Multistructural

Two or more aspects of a task are picked up or understood serially, but are not interrelated.

Relational

Several aspects are integrated so that the whole has a coherent structure and meaning.

Extended Abstract

That coherent whole is generalised to a higher level of abstraction.

Assessment

To assess whether the intended learning outcomes outlined in the curriculum compass were attained by the teaching activities, a collection of 12 assessment activities is provided. The collection consists of summative, formative, ipsative and authentic assessment types divided into the competency types: Knowledge, Skills and Attitudes.

Assessment types

Summative assessment

The purpose of summative assessment is to gauge students' comprehension of the material. It refers to evaluating the student's learning, knowledge proficiency, or success at

the end of the process. And it is primarily used to compare students and/or report progress accordingly.

Formative assessment

Formative assessment helps students and instructors identify and close gaps. It promotes reflection about learning and teaching and charts the development of these processes over time. It is utilised by teachers in order to gain an understanding of their students' knowledge and skills in order to guide instruction.

Ipsative assessment

Ipsative assessment compares a learner's current work with previous works - either in the same field through time or in comparison with other fields. It's a highly personalised form of assessment where progress is measured against the needs and goals of the individual, not in comparison to external standards or performance of peers.

Authentic assessment

Authentic assessment puts an emphasis on the importance of contextualised tasks not being assessed in a "judgmental" way based on specific goal descriptions and criteria-based assessments as it will limit the authenticity. Instead, it is the educational context consisting of a problem identification that points to a "real-life practice" that is the focal point of view of the assessment activity, where students must present their ability to translate and integrate their knowledge. The participation of stakeholders or people from an external community of practice constitutes an essential premise for conducting authentic assessment.

Competency types

In educational sciences, there is a shift in what students need in order to fulfil their potential, from the previous focus on knowledge, skills, and competencies to a more recent focus on knowledge, skills, and attitudes, meaning encompassing not only knowing and doing, but also being.

Knowledge

Knowledge includes theoretical concepts and ideas in addition to practical understanding based on the experience of having performed certain tasks. This is the competency type to know.

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Skills

Skills are the ability and capacity to carry out processes and be able to use one's knowledge in a responsible way to achieve a goal. They involve mobilising knowledge, skills, attitudes and values to meet complex demands. This is the competency type to do.

Attitudes

Attitudes refer to the principles, values and beliefs that influence one's choices, judgements, behaviours and actions on the path towards individual, societal and environmental well-being. This is the competency type to be.

THE COLLECTION OF TEACHING ACTIVITIES

The collection of 28 teaching activities are distributed across the three core competency pillars: Ethics and Values, Designers and Stakeholders, and Technology and Design. They cover the entire design process, and range from activities such as lectures on theoretical grounding of values and ethics, to exercises in identifying both designer and stakeholder values, and further to envisioning the implications of designs.

The descriptions of the teaching activities provide the background and rationale behind each of the activities and describe how it supports or promotes teaching for values in design. The intended learning outcomes of the activity are listed, followed by step-by-step instructions, and the estimated time needed for running the activity (Short: ½ day, Medium: 1-2 days, Long: more than 2 days).

The descriptions also provide an overview of materials, tools, texts, and other resources needed to run the activity, and offer links to digital resources that can be accessed on the digital version of the educational resource.

The descriptions also provide two suggested assessment activities that can be carried out (in class or after class) to assess whether the intended learning outcomes were attained.

Introduction to values in design

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Multistructural

••

TIME:

Short

SUMMARY

This teaching activity is an introductory lecture in which students gain knowledge about the role of values in design. They will briefly be introduced to some design approaches that consider values in design, and receive a more detailed introduction to the Value-Sensitive Design approach in particular.

BACKGROUND

While students are often introduced to different design approaches, such as Agile, User-Centered, Critical or Participatory Design, they often have the notion that design is value-neutral. This prohibits them from taking a reflective and active stance towards values in present and future design projects.

Furthermore, even if students recognise the role that values play in design, they usually lack the knowledge to think about this issue and identify possible approaches to address values during the design process. This lack of knowledge may make them fall short when being confronted with or working with values in design projects.

In this teaching activity, students gain knowledge about the role of values in design, and are briefly introduced to some other design approaches that take values into account. The Value-Sensitive Design approach is explained in more detail, specifying the three types of investigation commonly found in VSD: conceptual investigations, empirical investigations, and technological investigations.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- describe why values are important in design and what role they may play,
- enumerate several approaches to addressing values in design (i.e. Values-Led Participatory Design, Value-Centered Design, Designing for Worth),
- characterise Value-Sensitive Design with its three types of investigations as a specific approach to addressing values in design.

PREPARATIONS

- Go through the slides provided and adapt them to fit the purpose of the specific course and lecture. For example, by providing examples of values in design that showcase the broad range of working with values in design within a certain domain, product, system or service.
- Find a relevant text on values in design and/or value-sensitive design and ask students to read it ahead of the lecture. Take inspiration from the texts mentioned in the materials. Ask students to read the selected relevant text as preparation for the lecture.

TEACHING ACTIVITY

1. Give an introductory lecture on values in design based on the adapted slides (see the slides provided).
2. Ask the students to individually think and note down a couple of concrete examples of technologies within their field of study where they have come across values in design.
3. Ask the students to individually identify and note down some of the implications of values in design in relation to their field, course or subject. For example, if students are in an AI course they can think of implications for society when it comes to AI, but if they are in an EdTech course they can think of implications of values in technologies for teachers and students.
4. After some time, ask the students to get together in groups of 3-4 and share the examples and points between them. Distribute a link to a shared documentation tool (e.g. Padlet, Google Docs, Teams, Miro or similar) with the groups.
5. Ask all groups to put the most important points or implications of values for design, design processes and for

Teaching for values in design

LINKS

MATERIALS:

[Slides as .pptx](#)

[Slides as .PDF](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Mind mapping for responsible
design](#)

[Round Robin Values
Brainwriting](#)

themselves as designers into the tool. The groups can also fill out a flipchart paper and hang them up side by side.

6. Run through the document and highlight important points or implications for values in design in relation to the groups' input in the document.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create maps of their knowledge about values (summative assessment) focusing on a) mapping different approaches to addressing values in design (i.e. Values-Led Participatory Design, Value-Centered Design, Designing for Worth) and b) mapping the three types of investigations as a specific approach to addressing values in design.

Assess students' learning by making them use their knowledge to co-create a round robin chart (formative assessment) with open-ended questions. Ask them to focus their questions around issues such as why values are important in design and what role they may play, the difference between different approaches to values in design (and their implications) or the different types of investigations one can take to address values in design in present and future design projects.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- explaining why values are important in design and what role they may play,
- giving examples of several approaches to addressing values in design,
- describing Value-Sensitive Design, its interactional stance and the three types of investigations it entails.

Introduction to ethics in design

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Relational

...

TIME:

Short

SUMMARY

This teaching activity is an introductory lecture in which students gain knowledge about ethics in design. They will briefly be introduced to some ethical approaches, formal and applied ethics, and ethical implications for design. They will then use these ethical approaches to discuss a given case.

BACKGROUND

The design of technology is not neutral, and the designer is always accountable. Therefore it is vital in order to become responsible designers to understand both the various moral traditions, the formal ethical rules and regulations, as well as adopting a reflective stance to applying ethics in the design practice. Students need to understand how their designs are intentional, how they are products of inscriptions by designers, and what the implications are with regards to stakeholder moral, will and agency – both in the product and in the process.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- account for why ethics is important in design,
- characterise several approaches to ethics (i.e. Utilitarian, Virtue-based, and Rights-based approach),
- describe formal and applied ethics in design,
- analyse a case using the approaches from the lecture.

LINKS

MATERIALS:

[Slides](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Mind mapping for responsible design](#)

[Case-based assessment for responsible designers](#)

PREPARATIONS

Go through the slides provided and adapt them to fit the purpose of the specific course and lecture. For example, by giving examples of ethics in design that showcase the broad range of working with ethics within a certain domain, product, system or service.

Find a relevant text on ethics in design and ask students to read it ahead of the lecture. Take inspiration from the texts mentioned in the materials. Ask students to read the selected relevant text as preparation for the lecture.

TEACHING ACTIVITIES

Give an introductory lecture on ethics in design based on the adapted slides (see the slides provided). In these slides, students will be asked to analyse a case.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to map their knowledge about ethics (summative assessment) focusing on mapping and describing the importance of different approaches to ethics (i.e. Utilitarian, Virtue-based, and Rights-based approach) in relation to design practice.

Assess students' learning by asking them to apply their knowledge about ethics in design on a case study (summative assessment) through identifying ethical approaches and their implications in design and imagining and analysing potential consequences of a design.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- characterising approaches to ethics (i.e. Utilitarian, Virtue-based, and Rights-based approach) and what role they play,
- describing the importance of formal and applied ethics in design,
- accounting for how formal and applied ethics can be utilised to concrete cases or scenarios.

Introduction to cultures and values in design

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Multistructural

••

TIME:

Short

SUMMARY

This teaching activity introduces students to value systems different from the Western value system, so that they can describe each value system and where it comes from and characterise each value system according to how it differs from the value system of the West. Finally, students work with combining different value systems as a way of identifying themselves with different value systems.

BACKGROUND

In the books *The Patterning Instinct* (Lent, 2017) and *The Geography of Thought* (Nisbett, 2003) the authors argue that humans will not be able to solve today's environmental problems if they do not combine human knowledge systems from the West, the East and indigenous cultures.

The different knowledge systems or “ways of seeing” present very different ways of understanding values and virtues.

Contemporary designers and engineers are educated in university institutions that build on scientific traditions that mainly come out of the Western knowledge systems. Thus, it is important to look beyond the Western knowledge systems and the values that they represent and look into other cultures' value systems.

This teaching activity introduces students to alternative value systems as they are covered in Lent (2017), Nisbett (2003), Ndubuisi (2017) and Somé (1999) through a lecture. Through

Teaching for values in design

this lecture, students get an introduction to a broader perspective on values than the one offered by Western cultures. Students become aware of how they might look into value systems alternative to the one offered by Western cultures.

The lecture is followed by a seminar where students discuss the differences between the value systems that they are introduced to. The students end with producing a combined list of values offered by the West and alternative value systems, and some research questions that open up for further research on values in other cultures.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- describe different value systems and their related perspectives on values,
- characterise each value system in relation to Western value systems,
- combine values from the Western value systems with values from other value systems found in Eastern cultures and indigineous cultures.

PREPARATIONS

- Prepare slides that present different cultures' ways of seeing/different world views, and their corresponding value systems. This can be done through visuals and other examples of how some of these values are manifested in the different cultures mentioned.
- The slides provided are based on Lent (2017), Nisbett (2003), and Ndubuisi (2017) and can be complemented with additional knowledge and perspectives on Western value systems and alternative value systems.
- Share the worksheet in a digital format, so that students can fill them in and share with the class.
- Arrange settings for discussions after the lecture.

TEACHING ACTIVITY

1. Give the lecture and present the slides with the alternative value systems and different perspectives on values to the class.
2. When students have made some personal notes about the values presented in the slides, the students should be divided into groups of four students. They are asked to work as a group on the worksheet provided or the Miro

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board that resembles the worksheet where they collect all their values and arguments for why they or others resonate with this value. While they do this collection of values, they present the values they have chosen to each other and discuss why they have chosen them. This might take another 20 minutes. The students are also welcome to look into other cultures on their own if they have experienced that certain values are significant.

3. Using the worksheet, support the students in finding ways in which each value word is manifested in the cultural traditions that they come from.
4. Support the students in formulating research questions that allow them to make further investigations into literature that describes alternative value systems.
5. Collect the worksheets and make them available to the class, so that students can review each other's worksheets. The content of these worksheets can later be used if students would like to combine and incorporate different value systems in their future designs of products, systems or services.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by making them use their knowledge to co-create a round robin chart (formative assessment) with open-ended questions. Ask them to use the alternative value systems and focus questions around phenomena seen from different historical and cultural perspectives as well as the implications this might have for design practice.

Assess students' learning by asking them to use their knowledge about different value systems related to a case study (summative assessment) that addresses one of the cultures introduced in the lecture. Ask them to highlight the difference in value systems when compared to the Western value systems and focus on describing how their design works (or should be adapted) if it was to be implemented in a different culture.

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Worksheets](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Round Robin values
brainwriting](#)

[Case-based assessment for
responsible designers](#)

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- describing the value systems, where they come from and their perspectives on values,
- characterising the value systems with a focus on how they differ from the value systems of the west,
- combining different value systems as a way for them to identify as values-led designers in relation to different value systems.

REFERENCES

Heike Winschiers-Theophilus, & Nicola J. Bidwell (2013) Toward an Afro-Centric Indigenous HCI Paradigm. *International Journal of Human-Computer Interaction*, 29(4), 243–255.

Lent, Jeremy (2017). *The patterning instinct: A cultural history of humanity's search for meaning (First edition)*. Buffalo, NY: Prometheus Books.

Ndubuisi, Ani (2017.) *Re-empowering Indigenous Principles for Conflict Resolution in Africa: Implications for the African Union*. *Africology: the Journal of Pan African Studies*, 10(9), 15-35.

Nisbett, Richard E. (2003) *The Geography of thought – how Asians think differently ... and why*. New York: Free Press, Simon & Schuster.

Somé, Sobonfu (1999). *The spirit of intimacy – ancient African teachings in the ways of relationships*. Albany, CA: Berkeley Hills Books.

Design with and for certain philosophies

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Extended Abstract

....

TIME:

Medium

SUMMARY

This teaching activity supports the understanding and experiencing of “the good and the beautiful” concept coined as “to kalon” by Aristotle, referring to the unity of the good (ethics) and the beautiful (aesthetics).

Through designing products, systems or services with a predefined (primary) function for different ethical frameworks during a design workshop or design project, students will be able to integrate an abstract value into the aesthetics of interacting with a product and the use of to kalon as a design principle. They will also be able to contrast the differences between various ethical frameworks and values from a design perspective, and connect, analyse and reflect upon theoretical concepts (to kalon and ethical frameworks) to design practice (building, experiencing various designs).

BACKGROUND

As claimed by Verbeek (2006, p. 361), engineers are “doing ‘ethics by other means’: they materialize morality”, which also applies to designers.

The challenge that students often face is either: 1) a lack of awareness of the ethical dimension of their designs, e.g., the design of social platforms like Facebook and Instagram are pushing teenagers to perfection and collecting likes from everyone, since all their peers seem to be flawless and liked, or 2) a lack of competency to be able to relate ethics and aesthetics in their designs. e.g. how can one design the public

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space in such a way that it is inviting the 1,5 meter COVID-19 distance, while respecting the autonomy and creativity of people?

By ethics, we mean the moral principles of conduct governing an individual or a group. By aesthetics, we mean the appreciation of the beautiful and its effects.

It is fairly hard to design, making abstract values “experienceable” when engaging with a product, system or service. Not being able to identify, describe, apply and reflect on the underlying values and ethics of products, systems and services and the relation with aesthetics, might lead to all kinds of unintended consequences of designs in use: users feeling frustrated, belittled, not able to express themselves, endangering themselves or others, etc. It might unintentionally push certain values, where others might be societally preferred or beneficial, as also shown with the example of the impact of social media on teenagers.

The outcome of this teaching activity helps students to understand, experience and reflect on the relation between aesthetics and ethics. This teaching activity offers a fairly explicit way of using ethical frameworks, students will start to understand the underlying relations, thus having handles to design and generalise their reflection on ethics and values to other design projects.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- integrate an abstract value into the aesthetics of interacting with a product, system or service and the use of to kalon as a design principle,
- contrast the differences between various ethical frameworks and values from a design perspective,
- connect theoretical concepts (to kalon and ethical frameworks) to design practice (building, experiencing various designs), which they jointly analyse and reflect upon at the end of the activity, The reflections may lead to a greater understanding of to kalon, especially the subtleties of ethics and aesthetics, as well as students’ own position towards ethics and values.

PREPARATIONS

- This teaching activity can be done in various ways, running from a two hours workshop till a half year project, where the outcome is directly linked to the level of depth, both theoretically and practically.
- Prepare a short presentation on to kalon (or at least the relation between the beautiful and the good) (see the slides provided) and select the ethical frameworks to work with. If preferred it is possible to use the set-up used in the paper of Ross et al., 2012.
- To use this teaching activity, it is not necessary to be fully knowledgeable about the rationales of these ethical frameworks. Rather, the aim is 1) to give students the basic elements of these rationales, 2) to provide examples to contextualise effectively these rationales without the need of a lengthy lecture, and 3) to invite students to look for more information themselves, e.g., on various online resources.
- It is beneficial for students to approach to kalon through aesthetics of interaction, hence an important part of the exercise is making a prototype. Make sure that there is sufficient material for the making of the prototype. Depending on the product to be designed (especially size-wise), it is beneficial to include materials that can support interactivity (joints, elastic bands, rope, connectors, rotating/sliding mechanisms, etc.).
- Moreover, a diversity of materials is preferred, including odd materials, in order to stimulate a rich, aesthetic interaction. In case the students have more time and build the prototypes outside class, they should be clearly reminded that the self-explanation and “experienceability” of the prototype is important. These prototypes need to be “tested” without explanation or guidance. Using already existing things/half-fabrics can accelerate the making process.
- Arrange settings for group work.

TEACHING ACTIVITY

STEP 1:

Introduce the students to the concept of to kalon by using the slides provided or a modified version thereof.

Thereupon, briefly introduce the students to different ethical frameworks through an explanation of the underlying rationale (e.g., Confucianism, Kant's Rationalism, Romanticism

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or/and Nietzschean ethics, see the slides), as well as through examples from related writing, paintings, movies, music, etc. As previously mentioned, it is not necessary to be fully knowledgeable on these rationales. Basic elements of the rationale and the possibility for students to explore further on the internet should suffice.

STEP 2:

Next, divide the students into groups and assign them one of the ethical frameworks, without letting the other groups know who is designing for what. Depending on the available time (in case of having more days for the activity), ask the students to find additional inspirational material about their assigned ethical framework.

STEP 3:

During a short introduction, explain which product, system or service that needs to be designed, e.g. designing a vending machine evoking the values underlying a specific ethical framework. It is preferable to select an interactive product, system or service, which requires different actions, while not being too complicated to understand.

STEP 4:

The students design their product, system or service. In case of a short workshop, they use simple props and materials to represent their product. If feasible, they can also use a Wizard-of-Oz approach, where the designers give the appropriate feedback through the (non-functioning) props. In case they have plenty of time, they can build an experienceable prototype.

During the making, the students are advised to document regular reflections, including making pictures of their process. This can support them afterwards in understanding the link between the aesthetics applied and the evoked ethics.

STEP 5:

During the presentations, students either demonstrate their design by showing the interaction (during short workshops) or invite others to engage with their interactive experienceable products, systems or services (for longer design projects). The other students are asked to reflect on the values they see, and detect the underlying ethical framework.

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For the presentations, it is advised that each group has a dedicated place to set-up their prototype (in case of a longer workshop/project) or props used for showing the interaction (in case of a short workshop). Each group is visited by the class one by one. In case of an experienceable prototype, another team is invited to try it out and guess which ethical framework is designed for and shortly explain why. In case of a demonstration of the design, the group acts out the interaction scenario and the class guesses which ethical framework is designed for and why.

It is advised to document (video and photo) the designs and interactions during these presentations, thus generating inspirational educational materials for the next class using this teaching activity, like the video of the Nietzschean vending machine (Groenendaal, Wesselink & Yin, 2014). Overall, the presentations should not be longer than a few minutes per team.

STEP 6:

The teaching activity is followed by a discussion and reflection session on to kalon. This final discussion takes place in order to elaborate the common understanding of to kalon and related ethics and aesthetics, based on the concrete designs that were made, as well as relating to kalon to existing products and services.

Moreover, students can also compare their own values, worldview and vision on design with the ethical frameworks.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create maps of the theoretical frameworks and concepts (summative assessment) focusing on a) how the ethical frameworks differ from each other from a design perspective and b) how theoretical concepts connect to design practice and their own position towards ethics and values.

Assess students' learning by having them record a personal video (ipsative assessment) analysing and reflecting on how they can integrate abstract values into a product, system or

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Mind mapping for responsible design](#)

[Personal values-reflection video](#)

service and how they can use the kalon in their own position towards ethics and values.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- using the kalon as design principle to work with abstract values,
- highlighting the difference between various ethical frameworks and values from a design perspective,
- connecting theoretical concepts to design practice and their own design position towards ethics and values.

REFERENCES

ON TO KALON:

Ross, Philip R.; Overbeeke, Kees J.; Hummels, Caroline; and Wensveen, Stephan A.G. (2012). Designing for to kalon: How the unity of beauty and good inspires interactive product design. *International Journal of Product Development (IJPD)*. Special issue on Integration of emotional and technological values in the design of pleasurable products and systems, 16(3/4), 187-206.

Bas Groenendaal; Rik Wesselink; and Pei Yin (2014). Nietzschean vending machine [Video file]. Retrieved from <https://vimeo.com/88564511>

ON AESTHETICS OF INTERACTION:

Klooster, Sietske; and Overbeeke, Kees J. (2005). Designing products as an integral part of choreography of interaction: the product's form as an integral part of movement. *In Design and Semantics of Form and Movement, proceedings of the 1st European workshop on Design and Semantics of Form and Movement*. Newcastle, UK, p. 23- 35.

Hummels, Caroline; Overbeeke, Kees J.; and Klooster, Sietske (2007). Move to get moved: a search for methods, tools and knowledge to design for expressive and rich movement-based interaction for design. *Pers Ubiquit Comput* 11, 677-690.

ON ETHICS AND MORALITY:

Verbeek, Peter-Paul (2006). Materializing morality – Design ethics and technological mediation. *Science, Technology and Human Values*, 31(3), 361-380.

Manifestos on values and ethics

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Relational

...

TIME:

Short

SUMMARY

This teaching activity introduces students to various types of values and ethics manifestos from related fields such as design, architecture, art, and humanities. Through this activity, students will become able to name several manifestos, compare different value statements, and in turn, explain which ethical and/or political stances they agree with and which they are against as designers.

BACKGROUND

When writing their own design manifesto, students often focus on what they themselves believe in, meaning that they pay little attention to what others believe in.

However, in order to take a position and avoid intolerance towards those who hold different opinions from oneself, it is important to be aware of diverse viewpoints and to learn not only to agree but also to disagree with others in a constructive manner. The students will gain this understanding by reading several inspiring and thought-provoking examples of manifestos from multiple fields and discussing their individual stances.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- name some example manifestos,
- compare different value statements and ethical stances,
- explain their own value position by reflecting on what they agree with and what they are against.

PREPARATIONS

- Look at the Chorus of Values worksheet provided and determine whether to alter any of the values by looking at some different values and ethics manifestos from diverse fields/sources (for inspiration see the list of Design manifestos provided).
- If some of the values listed in the Chorus of Values worksheet are exchanged with some other values, make sure to select quotes that are pithy, provocative, and inspiring. Include diverse and sometimes conflicting value statements.
- Distribute the Chorus of Values worksheet to the students.
- Prepare a brief lecture about values and ethics manifestos (what they are, what some examples are and where they come from).

TEACHING ACTIVITY

1. Ask the whole class to read out loud the ten value statements together in chorus.
2. Give your short lecture about values and ethics manifestos.
3. Again, ask the whole class to read the ten value statements together in chorus, but this time, tell students to read out loud only for the ones that they agree with, and keep silent for the ones they disagree with.
4. Ask students to break into a small group to discuss which statements they agree or disagree with and why.
5. Ask students to compose their own value statement in a single sentence, either individually or in a small group.
6. Ask students to share their personal or group value statements.
7. Have a discussion about the value statements.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to write a reflective report (formative assessment) wherein they compare some of the manifestos discussed in the lecture or they find themselves focusing on highlighting the difference in value statements and reflecting on which ethical and/or political stances they agree and disagree with.

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LINKS

MATERIALS:

[Chorus of values worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Reflective values report](#)

[Personal values reflection video](#)

Assess students' learning by making them record a personal video (ipsative assessment) where they address some of the manifestos introduced in the lecture and how this has made them develop as responsible designers and think differently about their own value position.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- showing their awareness of the role of manifestos and how different manifestos foreground different value positions, politics or ethical stances,
- comparing the different value statements and ethical stances in the manifestos and reflecting on the implications for working with values in design,
- explaining their own position as responsible designers by arguing for the value positions, politics or ethical stances they agree with or disagree with.

Values manifested in products, systems and services

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Relational

...

TIME:

Medium

SUMMARY

In this teaching activity, students learn how to analyse, compare and criticise the underlying values that are embedded and manifested in products, systems and services.

BACKGROUND

While new products, systems or services are often promoted as adding value to people's lives, such statements might also veil the philosophical, theoretical, political and cultural influences on a particular design (Friedman and Hendry, 2019).

If students don't engage in a critical reflection on how values are manifested in products, systems, or services they may not understand how these embedded values might have an impact on the way we think, our lifestyles, and our culture. In other words: how products, systems and services "speak" to us and shape our everyday lives and mindsets.

This teaching activity provides students with some examples of existing products where the underlying motivations and contextual influences behind the designs are brought up for discussion. Students learn to find the underlying values that are embedded in a product, system or service.

This teaching activity trains students in noticing what kinds of cultural and philosophical influences are behind a product, system or service. When students have done some analysis, they might be able to come up with research questions that address the philosophical, theoretical, political and cultural influences that shape contemporary products.

LEARNING OUTCOMES

After the teaching activity, students will be able to:

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- analyse which values are manifested in existing products, systems or services,
- compare what characteristics of a product, system or service exhibit certain values,
- critically discuss what kinds of “language” products, systems, or services speak to the users, and how the products, systems, or services reflect the cultures and societies that have designed them.

PREPARATIONS

- Prepare slides that present products, systems and services that demonstrate values (for inspiration, see the slides provided).
- The criteria for selection of examples are that the products, systems or services should represent clear examples of how values can be embedded in the product, system or service: either through the way they look and/or through the actions that they suggest people to engage in when using them.
- Arrange settings for group work (suggested group size: 4 students). Students are asked to bring pen and paper and post-it notes to the class.
- Distribute the two worksheets provided to the student groups.
- As an inspiration, a collection of values words such as the HuValue Tool or the Schwartz Theory of Basic Values can be shared with the students.
- Alternatively, the worksheets can be re-created in an online collaborative platform (e.g. Miro or Mural) and the students can work with digital versions of the worksheets.

TEACHING ACTIVITY

The teaching activity is divided into three steps.

STEP 1:

Present a selection of examples that clearly demonstrate different cultural aspects, philosophies and/or theories behind different products, systems and services.

The values could be related to ways of seeing human virtues and qualities, ways of perceiving the values that new technologies might bring into people's lives, and ways of understanding the particular culture in the way that a product, system or service was made.

In dialogue with the students, highlight the underlying values and “mindsets” behind the examples. In case it is unclear where the values come from, pose some questions to the students regarding the presented products, systems and services that can be used to explore why students perceive certain values and how they might be influenced by their

Teaching for values in design

personal social and cultural context. For each value discussed, reflect upon, question and discuss the kind of context that influences students, philosophy and culture, that underpins the choice of values manifested in the particular products, system or services on display.

The slides provided display products related to the theme “parents and children” and communicate values related to the upbringing of children:

- Two different bikes for toddlers (different visions behind parenting and child development).
- Barbie through history (how females were perceived in the Western society from the 1950s and on).
- Pampers diapers connected to a mobile app (how the vision of new technology influences parent-child relationships). While being a marketing example, it also exhibits values in the culture where it was produced.

STEP 2:

Now ask the student groups to find one product, system or service that they think clearly exhibits some values, and to use worksheet 1 and 2 to document their analysis.

INSTRUCTION FOR WORKSHEET 1:

When looking at the product, system or service, the students are asked to put as many value words as they can think of in the circle to the left (they may want to use the HuValue Tool or Schwartz Theory of Basic Values for inspiration).

Afterwards, students review the value words they put in the circle. They should identify the ones where they can see what characteristics of the product somehow manifest that word. Then students should draw a line from the circled word to one of the boxes to the right, and explain what it is about the product, system or service that manifests a particular word.

INSTRUCTION FOR WORKSHEET 2:

The students should copy the value words from the circle in the worksheet 1 into the circle in the worksheet 2.

Ask the students to question if the designers of that product, system or service had an underlying philosophy, or if they based their design on a theoretical framework, or were biased by a specific trend in the culture where the design comes from.

Thereafter the students should draw a line between the value words and the themed boxes (Assumption/Logic/mental model of the designer, Theoretical framework, Cultural perspectives, Philosophical perspectives) and write some notes about where they think the value words come from. In other words: by which sources and cultural trends the designers were influenced.

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The students work independently, while the teacher walks around between the groups and occasionally jumps into the group discussions and gives input on how they fill in the worksheets.

STEP 3:

The student groups present a visual documentation of the product, system or service that they have analysed. They bring the two worksheets to the plenum presentation, and show the results of their analysis.

Then they describe the different reflections of the values that they found in the product, system or service and present their questions that might lead to further research on where the identified values come from. After this presentation, the teacher and the students can comment on the analysis.

The student groups compile their worksheets and create a document with an image of the product, system or service that they analysed and the corresponding worksheets where they compared manifestations with value words, and where they critically discussed where the values come from.

The documents are made available to all the students in the class, so that they can review each other's products and corresponding worksheets.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by making them create a value-based video pitch (summative assessment) focusing on analysing and comparing the underlying values that are embedded and manifested in products, systems and services

Assess students' learning by asking them to apply their knowledge on real-world examples (authentic assessment) to compare and critically discuss the kind of cultural and philosophical influences that are behind products, systems or services.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- analysing existing products, systems or services in relation to their manifested values and underlying motivations,
- comparing existing products, systems or services in relation to their exhibition of certain values and cultural influences,
- critically analysing and discussing the kind of "language"

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Worksheet 1](#)

[Worksheet 2](#)

[HuValue Wheel](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Video pitching for responsible
designers](#)

[Applying knowledge on real-
world examples](#)

that are behind the selected products, systems or services in relation to the cultures and societies that have designed them.

REFERENCES

HuValue (2021). HuValue Tool. Retrieved 2021-04-15 from <https://huvaluetool.com/>

WFLA News Channel 8(2019, July 20). Pampers Smart Diaper commercial [Video file]. Retrieved from <https://www.youtube.com/watch?v=82WPxv6WzJs>

Friedman, Batya & Hendry, David (2019). *Value sensitive design: shaping technology with moral imagination*. Cambridge, MA: MIT Press.

Schwartz, Shalom H. (2012). An Overview of the Schwartz Theory of Basic Values. *Psychology and Culture*, 2(1).

Values clustering for developing students' value vocabularies

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Multistructural

••

TIME:

Short

SUMMARY

This teaching activity expands students' value vocabulary when thinking and working with values in design. The students will consider the nuances, associations and different connotations of a specific value word, and through that exploration broaden and deepen their vocabulary around specific values.

To build an expanded value vocabulary, the students will create value clusters through conceptual explorations that identify, combine, and name value words' synonyms, antonyms, associations, connotations and denotations.

BACKGROUND

When working with values in design, students sometimes lack a nuanced and elaborate vocabulary for communicating about values. This creates the risk of a narrow understanding of what values in design imply and how to work with and talk about values in a holistic and multifaceted way. By expanding our value vocabulary, we might also gain a more nuanced understanding of the values we are working with – in effect creating better products, systems, or services.

If students lack a nuanced value vocabulary, values run the risk of becoming one-dimensional buzzwords with no depth or situated meaning.

LEARNING OUTCOMES

After the teaching activity students will have gained:

- broader knowledge about values through identifying and naming associations, synonyms, antonyms, connotations and denotations for specific value words,

Teaching for values in design

- deeper knowledge about values through combining value words and constructing clusters of value words around specific value words.

PREPARATIONS

- Arrange settings for group work.
- Ask the students to prepare a short list of the value words that they would like to work with. It could either be a shared pool of personal values, or values related to their projects.
- Prepare a common worksheet (in an analog or digital format, for inspiration see the worksheet provided).
- Decide upon how the value clusters should be visualised and documented (in an analogue or a digital format), for example, as a list of primary and associated values, or as a mindmap.

TEACHING ACTIVITY

1. The students are introduced to relevant thesauruses, dictionaries, value vocabularies (such as the HUValue Tool or Schwartz Theory of Basic Values) and other materials that might help them broaden and deepen their vocabulary for, and understanding of, a certain value.
2. The students put their chosen and named values (prepared ahead of class) in front of them. They might want to document their values in a digital format, so that it is easy to copy to other digital tools such as a thesaurus. Students might, for example, use the provided worksheet as a way of generating and mapping out their value clusters.
3. The students start to generate and write down connotations, denotations, and synonyms of the selected values words. Relevant thesauruses, dictionaries, value vocabularies or other materials may be used by the students to look up and write down connotations, denotations and synonyms of the selected value word.
4. The students connect the generated vocabulary of related words for each value word, for example as a list of primary and associated values, or as a mindmap. This is the value cluster.
5. The generated value cluster is discussed in groups to come up with additional synonyms and associations and connect these with the value. To expand the value vocabulary even more, students can look up connotations, denotations and synonyms for the new value words as well as add their own associations to the different value words in the cluster. This will add another layer to their

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value cluster (this process can be repeated to add even more layers).

6. The value clusters are shared and reflected upon in a plenum discussion. The students are asked to reflect on their choice of words and whether they relate to the kinds of stakeholders and life situations that they work with in their projects.
7. Documentation of the value clusters can be commented on by the other groups or the teacher to provide reflections, words or feedback to the value cluster.
8. The value cluster can be used in succeeding teaching activities as a value vocabulary in the students' design projects, when communicating with stakeholders or when analysing existing products, systems, or services. Furthermore, it can be used to reflect on the ethical implications of a design.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create maps of their expanded value vocabulary (summative assessment) focusing on a) explicating and integrating nuances, associations and connotations of specific value words and b) combining value words into clusters.

Assess students' learning by making them co-create a round robin chart (formative assessment) with open-ended questions. Ask them to use their values clustering to reflect on the value words and their organisation of their clusters and what that might mean to them as responsible designers.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- identifying the associations, synonyms, antonyms, connotations and denotations of value words,
- combining value words along with their associations, synonyms, antonyms, connotations and denotations of value words to create a complex net of values,
- describing their values clustering and what implications this might hold for them and their design practice.

REFERENCES

HuValue (2021). HuValue Tool. Retrieved 2021-04-15 from

Teaching for values in design

LINKS

MATERIALS:

[HuValue Wheel](https://huvaluetool.com/)

SUGGESTED ASSESSMENT

ACTIVITIES:

[Mind mapping for responsible design](#)

[Round Robin values brainwriting](#)

RELATED CASES:

[Deepening understanding of values before creating value based design requirements](#)

[Values clustering: A case study on two teachers' approaches](#)

<https://huvaluetool.com/>

Bos-de Vos, Marina (2020). A framework for designing for divergent values, in Boess, S., Cheung, M. and Cain, R. (eds.), *Synergy - DRS International Conference 2020*, 11-14 August.

Boztepe, Susan (2007) User value: competing theories and models. *International Journal of Design* 1(2), 55-63.

Kheirandish, Shadi, Funk, Mathias, Wensveen, Stephan, Verkerk, Maarten, Rauterberg, Matthias. (2019). HuValue: a tool to support design students in considering human values in their design. *Int J Technol Des Educ*.

Schwartz, Shalom. H. (2012). An Overview of the Schwartz Theory of Basic Values. *Psychology and Culture*, 2(1).

Understanding values changing over time

SPECIFICATION

PILLAR:

Ethics & Values

DESIGN PHASE:

Value Theory

SOLO TAXONOMY LEVEL:

Relational

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TIME:

Short

SUMMARY

In this teaching activity, students position themselves within a very long historical timeline to reflect on value changes over time. Value changes can occur either due to social developments (e.g., French Revolution that overthrew the monarchy) or induced by technology (e.g., contraceptives which have had an effect on sexual morality). With an emphasis on both societal and technological changes (and the interaction between the two), students are encouraged to identify examples of particularly important or significant technical inventions/designs, analyse their historical context, compare contemporary values with past/future values, and explain how values change over time.

BACKGROUND

Students often focus on integrating a predefined set of values identified during the early stages of design. They often assume that these values will remain stable in the later stages of the design life-cycle during widespread adoption and use. However, values can change over time. New values may emerge in society (e.g., emergence of feminist values), the priority of values for a specific technological design may change during its use (e.g., increased emphasis on sustainability over efficiency), and the meanings or interpretations of the same value may change over time (e.g., how privacy is understood in the age of the Internet).

This activity will encourage students to situate their designs within a broader socio-historical context, to become aware of value changes, and in turn lead students to design products, systems and services that can better adapt to changing conditions.

LEARNING OUTCOMES

After the teaching activity students will:

- have gained a longer and broader perspective on the socio-historical context surrounding their design,
- be able to analyse and compare values from different time periods,
- be able to explain how values change over time, how changing values might have an impact on design, and how design might induce value changes in society.

PREPARATIONS

- Create a multi-lifespan timeline (see the provided example) (Yoo et al., 2016) – it can be either physical (e.g., a large-scale poster) or digital (e.g., a Miro board). Mark the current year at the center point. Indicate 25-year intervals stretching 100 years into the past and 100 years into the future.
- Above the timeline axis, populate the past 100 years with a handful of examples of social events and technological innovations (e.g., World War II, space walk, the fall of the Berlin Wall, the first computer, the first iPhone, COVID-19 pandemic).
- Ask students to bring an example of the most meaningful technical inventions/iconic designs from the past 100 years (or beyond).

TEACHING ACTIVITY

1. Reflect as a whole group on some key societal events and technological innovations from the past, and how they have affected people's values.
2. Ask students to add to the timeline what they think is the most important or significant technological invention/design of the past century. Ask students to explain their choice, its historical context, and how it has affected people's values.
3. Brainstorm ideas for the future of society and technology: what might happen in the next 100 years? Record suggestions on sticky notes and place them on the timeline. Avoid "factual forecasting," but rather to focus on creative visions.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

Teaching for values in design

LINKS

MATERIALS:

[Multi-lifespan timeline](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Case-based assessment for responsible designers](#)

[Reflective values report](#)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to apply their understanding of changing values over time on a case study (summative assessment) by creating a time traveling scenario, imagining how a design might be used and valued differently by people from the past or the future.

Assess students' learning by asking them to write a reflective value report focusing on students' awareness of the dynamic socio-historical context surrounding design, and how they are manifested in products, systems and services (formative assessment of knowledge)

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- comparing contemporary values with past and future values,
- explaining the interplay between the social events and technical innovations (e.g., the COVID-19 pandemic and telepresence technologies),
- analyzing how values are manifested in products, systems and services from a socio-historical perspective.

REFERENCES

van de Poel, Ibo (2021). Design for value change. *Ethics and Information Technology*, 23, 23–31.

Yoo, Daisy; Derthick, Katie; Ghassemian, Shaghayegh; Hakizimana, Jean; Gill, Briam; & Friedman, Batya (2016). Multi-lifespan design thinking: two methods and a case study with the Rwandan diaspora. *In Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 4423-4434).

Individual designer's values identification and hierarchy

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Research

SOLO TAXONOMY LEVEL:

Multistructural

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TIME:

Short

SUMMARY

In this teaching activity, students will learn to formulate their own values. They will be able to describe similarities and differences of their own values to those of others, and to illustrate that values are an integrated part of their design work. This is beneficial because designers are also stakeholders in design.

BACKGROUND

Design work is often based on a collaborative effort of a group of designers. While students are often introduced to design methods for involving other people in the design (e.g. interviews or focus groups), these methods do not necessarily address or relate to other people's values, and they also do not focus on the values of the project members themselves.

This teaching activity supports students in becoming able to understand and explain their own underlying values, that their values are different from other students' values, to adapt to other students' values, and explain that values have an impact on the design of products, systems and services.

LEARNING OUTCOMES

After the teaching activity students will:

- have gained an understanding of their own underlying values by formulating them using existing value frameworks,
- be able to describe the similarities and differences between their own values and other people's values,
- be able to illustrate that values are the drivers of behaviour in all kinds of activities, such as design activities.

PREPARATIONS

- Consider whether the activity will run both steps or just one of the steps at a time (see Teaching Activity).
- Consider whether the activity will run in an analogue or digital way (see Teaching Activity).
- Choose a collection of values, such as the HuValue Tool or Schwartz Theory of Basic Values.
- Consider if the students should do a preparatory activity for identifying their individual values, such as the Schwartz Value Inventory, see the slides for instructions. The activity can be done in the classroom or as homework before class.
- Arrange settings for group work.
 - Analogue: Place post-its and pens on the tables for each student.
 - Digital: prepare two digital shared repositories (e.g. Google docs, Menti.com, Wordcloud).

TEACHING ACTIVITY

Show a collection of values for inspiration, such as the HuValue Wheel or Schwartz Theory of Basic Values.

STEP 1: INDIVIDUAL

- Ask the students to individually decide on three values that are important to them as a person.
 - Analogue: ask the students to write down their values on post-it notes or papers.
 - Digital: ask the students to report on their three values in a shared repository (e.g. Google Docs, Menti.com wordcloud, etc.).
- Share the collection of students' values with the class. Ask the following questions:
 - What are the similarities and differences between your values and other people's values?
 - In what ways do these values have an impact on you as a student/designer/group member?
- Take a concrete example from the student values, and problematise it, e.g., if "sustainability" is a core value for many students, how will this impact them when meeting with people? Will they value people who go by car instead of bicycle differently?

STEP 2: GROUP

- Ask the students in groups to agree upon five values that are important to them as a group of students.
 - Analogue: ask the student groups to write down their values on post-it notes or papers.

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Schwartz value inventory](#)

[HuValues Wheel](#)

SUGGESTED ASSESSMENT

ACTIVITIES:

[Reflective values report](#)

[Personal values reflection video](#)

RELATED TEACHING

ACTIVITIES:

[Design team's values identification and hierarchy](#)

[Design team's value statement manifesto](#)

RELATED CASES:

[Identifying the designer's, the design team's and the stakeholder's values](#)

- Digital: ask the student groups to report on their three values in a shared repository (e.g. Google docs, Menti.com wordcloud).

- Share the collection of group values with the class. Ask the following questions:
 - What are the similarities and differences between your values and other groups' values?
 - In what ways do these values have an impact on your design work as a group?
- Share the results of the two steps with the students, so that they can return to them later.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to write a reflective value report (formative assessment) where they present their formulated values, the implications of them compared to those of others and reflect on how to make values an integrated part of their design work.

Assess students' learning by asking them to record a personal video on values (ipsative assessment) where they through a visual medium illustrate their values and how the teaching activity has made them reflect and develop as responsible designers to think differently about their own value position.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- formulating their own values and how they might shape them as responsible designers and impact their design practice,
- describing how their individual values interact with and position them in relation to the values of other students or stakeholders,
- illustrating how values can be a driver in their design work and might impact on the design of products, systems and services.

REFERENCES

HuValue (2021). HuValue. Retrieved 2021-04-15 from <https://huvaluetool.com/>

Schwartz, Shalom H. (2012). An Overview of the Schwartz Theory of Basic Values. Online Readings. *Psychology and Culture*, 2(1).

Design team's value identification and hierarchy

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Research

SOLO TAXONOMY LEVEL:

Multistructural

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TIME:

Short

SUMMARY

This teaching activity enables students to identify and name the core values they have as a group. It enables them to define their individual values and arrange them into group values through choosing which values are individual values and which values are group values. Finally, the group arranges the group's values into a value hierarchy with primary and secondary values to be shared by the whole group or design team when designing products, systems and services.

BACKGROUND

If students are only able to take into consideration and orient themselves on the basis of their own individual value sets rather than a team's shared value hierarchy, they run the risk of creating value tensions or conflicts within the team, the team's design process and, subsequently, the final design.

This teaching activity helps students working in groups or teams to establish a common ground with shared and prioritised values. Furthermore, it helps students sort, hierarchise and interconnect values into a value hierarchy for the group, where some values are in the foreground (primary values) and other values are in the background (secondary values).

The value hierarchy is materialised in the Designers' Value Hierarchy Map enabling discussion and reflection between students in the design team – as well as between teacher(s) and the groups – or group and stakeholders – about how their values come together with stakeholders, design contexts, etc.

If students are not able to identify and arrange a shared and prioritised value hierarchy within their group or design team, they might end up with a design that is created based on a patchwork of more or less conflicting and unprioritized

Teaching for values in design

individual values, rather than a product integrating and expressing values in a prioritised and harmonious ways.

When students have established a shared and prioritised Designers' Value Hierarchy Map, they are subsequently better able to negotiate, work with and integrate indirect and direct stakeholder values.

Generally, the Designers' Value Hierarchy Map, is to be constructed before the group or the design team begins communicating and negotiating with stakeholders, in order for the design team to give stakeholders a clear and solid impression of the design team's values.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- identify and name the group's core values,
- define individual values and select and deselect individual values to choose which values should be included in the group's values,
- arrange the chosen group's values into a value hierarchy with primary and secondary values.

PREPARATIONS

- Arrange settings for group work.
- Print the Core values list (1 copy per student) and the Designers' Value Hierarchy Map template (1 copy per group) and place them on the tables, together with post-its in two different colors (e.g. yellow and blue) and pens on the tables.
- Divide the students into groups, if they are not already working in groups or design teams.

TEACHING ACTIVITY

STEP 1:

Give a short introduction on the importance of being conscious of your own (individual and group) values when designing products, systems, or services. The activity Introduction to ethics in values or Introduction to values in design can be used for inspiration. Approximate duration: 10-15 minutes.

Highlight different groups of values in the Core values list and discuss how different values constitute different attitudes and approaches to design that again might lead to radically different designs of the same product (e.g. a phone, social media platform or car). Approximate duration: 15-20 minutes.

Highlight the fact that different value prioritisations will impact the design process and designed product, system

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or service in different ways even if the values are the same (e.g. “fun” as a core value with “leadership” as underlying value ruled by fun – or “leadership” as core value and “fun” as underlying value ruled by leadership).

Walk through the materials on the tables and the different steps of the workshop.

STEP 2:

Ask the students to go through the Core values list individually and select the 5-10 values that are most important to them (5 for bigger teams, 10 for smaller teams). Students write one value on each yellow post-it note so that they end up having 5-10 yellow post-it notes in front of them containing the human values that are most important to them as designers. In this part of the workshop they should not talk to each other, but work individually, identifying their own values.

STEP 3:

Ask students in the teams to take turns reading aloud the values on the post-it notes in front of them and placing them in the middle of the table. Tell the students that these values are no longer their individual values but the team's shared pool of values.

Ask students to look at the team's shared pool of values and sort the post-it notes into five categories sharing some common theme or attribute. Tell the students that it is okay to leave values behind that don't fit the categories or are deemed of lesser importance.

Ask students to take the blue post-it notes – representing the core values of the team, and for each of the five categories write one core value on a blue post-it note that encapsulates the content of the category. Place the blue post-it note on top of the pile of yellow post-it notes in the category. Tell the students that it is fine if the value on the blue post-it is identical or different to values on a yellow post-it note in the category.

Ask students to prioritise the five core values (blue post-it notes) containing their underlying values (yellow post-it notes). Ask them to look at the five core values of the design team and then identify their “super value”, that is, the value that will be the most important in the design process. The core value will instruct the design work of the design team. Tell students that the super value should somehow encapsulate the spirit of the entire pool of values while considering the hierarchy of the five core values.

Ask students to transfer the supervalue, core (primary) values, and underlying (secondary) values to the Designers' Value Hierarchy Map template. Tell them to write the name of their design team (or invent one) on top, write the super value in big capital letters under “Super value” and their

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core values in uppercase letters under “Core values” in the prioritised order. Tell the teams to go through their underlying values (yellow post-it notes) placed under each core value and insert underlying values that might add important nuances, dimensions or clarification to the meaning of the core value. The underlying values should be written between parentheses after the core values and in lowercase letters.

STEP 4:

In class, ask each team to share their Designers' Value Hierarchy Map including the super value and core values. Ask each team to reflect on why and how they ended up with these values and if something interesting emerged between the team members during the process.

In class, reflect on the significance and challenges of creating a shared value hierarchy and designing based on such a shared value hierarchy.

STEP 5:

Talk to students about how the exercise and the value hierarchy can be used to guide the designers and design process as it moves forward.

Ask students to capture and share or upload their Designers' Value Hierarchy Map.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to record a group video on values (ipsative assessment) where they through a visual medium illustrate the value position they share as a group and how the teaching activity made them develop and come together as a values-led design team.

Assess students' learning by asking them to carry out an internal self-assessment amongst the group members (formative assessment) focusing on how they dealt with value negotiation and conflicts in the group to arrive at their design team's value identification and hierarchy.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- formulating how they moved from individual values to shared group values in a systematic and deliberate fashion,
- describing how the design teams' value hierarchy is organized the way it is and how prioritizations between values were made,

Teaching for values in design

LINKS

MATERIALS:

[Core values list](#)

[Designers' value hierarchy map](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Personal value reflection video](#)

[Self assessment for responsible
designers](#)

RELATED TEACHING
ACTIVITIES:

[Individual designer's value
identification and hierarchy](#)

[Design team's value statement
manifesto](#)

RELATED CASES:

[Identifying the designer's,
the design team's and the
stakeholder's values](#)

- reflecting on how the design teams' values might help them act as a responsible design team and impact their design practice.

REFERENCES

Threads Culture (2021). Core Values Examples. Retrieved 2021-04-15 from <https://www.threadsculture.com/core-values-examples>

Design team's value statements manifesto

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Synthesis

SOLO TAXONOMY LEVEL:

Relational

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TIME:

Short

SUMMARY

This teaching activity enables students to explain how their values constitute a certain attitude, approach to and agenda for the design process and product. Through constructing value statements and relating them to each other, they form a shared team manifesto, the group is able to act on their values and interpret them as design positions and orientations. After the teaching activity, students have, as a group or team, transformed values into an actionable design position in the form of a shared Design team's value statements manifesto that integrates the design team's value-oriented attitude and ambition.

BACKGROUND

Even if students as a group have established their values, they often find it challenging to know how to turn them into actionable principles for the group or design team in a design process and project.

This activity helps students construct a shared value manifesto with design principles constituting the design team's design position and orientation in the design process. Furthermore, it helps students combine and classify their manifesto-like design principles into a unified value statement manifesto for communicating their attitude and approach to design as a design team. This helps the group or design team negotiate with stakeholders and make decisions in the design process.

The group's value statements are materialised on the Value statement workshop cards provided and in the Design team's value statement manifesto, enabling discussion and reflection between students in the design team – as well as between teacher(s) and student teams – or student teams and stakeholders – about how their value-oriented attitude and

Teaching for values in design

approach is acted out in the design process with stakeholders, design contexts, etc.

If students are not able to formulate how they want to integrate or act on their values in the design process or project, they run the risk of creating design conflicts or paralysis within the team, the team's design process and the final design product, system, or service. Here, the students need a shared design stance or argument in the form of a designers' value statements manifesto to guide their work.

When students have formulated shared and actionable value statements, they are subsequently able to engage in reflective value-oriented design arguments that can guide their design work with stakeholders.

Generally, a Design team's value statements manifesto is to be constructed before the group or design team begins communicating and negotiating with stakeholders, in order for the design team to give stakeholders a clear and solid impression of the design team's design principles and approach.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- explain how their values constitute value-oriented design principles,
- construct shared value statements on the grounds of their group values and individual value statements,
- relate individual value statements to each other to form a shared "Design team's value statements manifesto" they can act on as a group,
- act on their values and interpret them as design positions and orientations.

PREPARATIONS

- The students should have performed the prerequisite activity Design team's value identification and hierarchy (or similar).
- Arrange settings for group work.
- Students carry out the activity in their groups or design teams – otherwise the teacher places students in groups.
- The groups bring with them their completed Design team's value identification and hierarchy (or similar overview of the groups shared values).
- Print out the empty Design team's value statement manifesto sheet (1 copy per group) and the empty Value

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statement workshop cards (10 copies per student).

- Make sure there are pens in different colours available.
- Print out examples of manifestos (search for “design manifesto” online or see the teaching activity “Manifestos on values and ethics”) to show as examples ahead of the teaching activity.

TEACHING ACTIVITY

STEP 1:

Give a short introduction on the importance of being conscious of your own (individual and team) value-oriented attitude and approach when designing products, systems or services. You can use the teaching activities Manifestos on values and ethics, or Mapping Value Landscapes for inspiration or to show students how different value-oriented design principles might impact the design process or project in different ways. Remind students to think beyond narrow utilitarianistic or practical statements, when it comes to the human values and visions for values in design that are of importance to them. Approximate duration: 15-20 minutes.

Walk through the materials on the tables and the different steps of the workshop. Approximate duration: 5-10 minutes.

STEP 2:

Tell students to go through their “Design team’s value identification and hierarchy” (or similar) and fill out individually 5-10 Value statement workshop cards that integrate one or more values from the “Design team’s value identification and hierarchy” into a value statement. Ask students to integrate values in their statements in such a way that they form sentences that they are able to act on as designers. Ask students to reflect on whether their value statements, when taken together, have captured most of the important aspects and values of the design team’s value hierarchy.

In this part of the workshop the students should not talk to each other, but work individually, formulating their own value statements.

STEP 3:

Ask students in each team to take turns reading aloud the individually formulated sentences on the workshop cards and then place them in the middle of the table. Tell the students that these value statements are now no longer individual statements but the group’s or design team’s potential value statements.

STEP 4:

Ask students to look at the team’s pool of workshop cards and sort the sentences on the cards into four common themes

Teaching for values in design

or principles. Tell the students that it is perfectly fine to leave value statements behind that don't fit the group's selected themes or principles or are deemed of lesser importance.

STEP 5:

Ask students to use markers to highlight good and actionable sentences, phrases or statements on the workshop cards within each of the four themes and combine these into four shared value statements (one for each theme). The four value statements are formed as sentences on four empty workshop cards.

STEP 6:

Ask students to prioritise the four shared value statements. Ask them to reflect on what sentences/card should come first when formulating and expressing the group's value statement manifesto. Here, value statement 1 will influence and take precedence over value statement 2 and so forth. Ask them to write down and combine value statements 1-4 on the Design team's value statement manifesto.

STEP 7:

Ask the group to come up with a motto for the design team that will reflect the team's spirit and overall value-oriented attitude, approach or ambition as a design team. Ask them to write their motto at the top of the Design team's value statement manifesto.

STEP 8:

As a class, ask each team to share their motto and "Design team's value statement manifesto". Ask each team to reflect on why and how they ended up with this particular manifesto.

As a class, reflect on the significance and challenges of creating a shared and actionable "Design team's value statement manifesto" and the implication for their attitude, approach and ambition as a design team.

STEP 9:

Talk to students about how the exercise and the "Design team's value statement manifesto" can be used to guide them as designers and take decisions in the design process as it moves forward.

Ask the groups to capture and share/upload their manifestos.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by making them do peer feedback (authentic assessment) on each other's value statements manifesto. Ask them to comment and pose questions in

Teaching for values in design

LINKS

MATERIALS:

[Designers' value statement manifesto](#)

[Value statement workshop card](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Peer feedback for responsible designers](#)

[Blogging for responsible designers](#)

RELATED TEACHING ACTIVITIES:

[Individual designer's values identification and hierarchy](#)

RELATED CASES:

[Identifying the designer's, the design team's and the stakeholder's values](#)

relation to how the value statements relate to each other and how they would interpret them as design positions and orientations.

Assess students' learning by asking them to write a series of short blog posts (ipsative assessment) during a design process 1) presenting their manifesto and how the statements relate to each other, 2) explaining how their manifesto constitutes a specific design position or orientation in their design work, 3) reflect on how their manifesto impacted their design process, and 4) how their manifesto is visible in their designed product, system or service.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- describing how their value statements constitute specific design positions, principles or orientations,
- relating individual value statements to each other and reflect on how they come together in a unified manifesto or design agenda,
- explaining how the manifesto points towards certain design processes and products and how this positions them as designers with a certain values-led approach and attitude when working with stakeholders.

Listing stakeholders and their values

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Research

SOLO TAXONOMY LEVEL:

Multistructural

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TIME:

Short

SUMMARY

This teaching activity broadens students' perception of stakeholders beyond the narrow focus on end-users. Through this activity, students become able to identify and list a diverse range of direct and indirect stakeholders, describe their different roles, and discuss multiple stakeholders' values implicated in products, systems, or services.

BACKGROUND

Students often focus only on the end-users and overlook others, who do not necessarily interact directly with the technology, but are still implicated by the technology nonetheless. Students often lack a broader perspective on people and the social context in which products, systems, or services will be integrated. In particular, the roles of non-targeted users such as adversaries and indirect stakeholders such as bystanders are often overlooked by the designer.

If students only think of people in terms of users, they might end up focusing on immediate tasks and short-term goals without considering the ripple effect of their design that might cause unforeseen consequences in a long run. Students may end up unintentionally creating products, systems or services that do more harm than benefit for some people.

Through this activity, students will become able to identify a diverse range of direct and indirect stakeholders, and discuss their different roles and values implicated in products, systems, or services. This understanding is materialised in the worksheet Direct and indirect stakeholder analysis, which enables discussion and reflection between teacher and the groups about the impact and ripple effects of a specific product, system or service.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- know the difference between indirect and direct stakeholders,
- identify and list multiple stakeholders,
- describe each stakeholder's role, key values, "benefits" and "harms" in relation to a specific product, system or service,

PREPARATIONS

- Prepare settings for group work.
- Distribute the worksheet Direct and indirect stakeholder analysis (1 set per student or project group)
- Find a text that describes the concepts of direct and indirect stakeholders (e.g. Friedman et al., 2013; Friedman & Hendry, 2019). Ask students to read it as preparation for the activity.
- Give examples of direct and indirect stakeholders that showcase the broad range of people that are potentially impacted by a certain product, system or service.
- Highlight the fact that a single individual can take up multiple roles at different times (e.g., a person can use Facebook as a parent to upload baby pictures, and also use it as a professional to communicate their work with her/his colleagues).
- Remind students to think broadly and be imaginative when it comes to stakeholders (e.g., consider non-human stakeholders), their values, harms and benefits.
- Walk through and explain how to use the worksheets (e.g., show an example of completed Direct and indirect stakeholder analysis) in order for students to gain an understanding of what they are supposed to do during this activity.

TEACHING ACTIVITIES

1. Instruct students to identify key stakeholders and complete the stakeholder section on the worksheet.
 - Ask students: Who are the important people, groups, or communities involved?
2. Go around among student groups to see how they work. If students struggle to come up with a rich list of stakeholders, brainstorm together with students.
 - Ask students: Who else do you think would care about this product, system, or service and why?

Teaching for values in design

3. Encourage students to think about different roles a single individual can take up.
 - Ask students: Think about an individual who at one point in time is in the role of a direct stakeholder. Can this person's role change into an indirect stakeholder at another point in time? If so, how? List all the roles into separate rows.
4. Encourage students to think about non-targeted users.
 - Ask students: Who might use the product, system or service for nefarious purposes (e.g., an identity thief)?
5. Encourage students to think about excluded stakeholders.
 - Ask students: Is there anyone who is left out? Is there anyone who is marginalized by the product, system or service (e.g., people with disabilities, homeless people, elderly people, low socioeconomic population)?
6. Encourage students to think about non-human stakeholders.
 - Ask students: What other living species do you think might be affected by this product, system or service (e.g., animals, environments)?
7. Instruct students to fill out the key values, benefits, and harms sections on the worksheet.
 - Ask students: For each stakeholder, think about their key values (what they consider most important in life), and what benefits and harms the product, system or service might cause for each stakeholder?
8. As a class, ask each group to share three to five most interesting stakeholders identified.
 - Ask students to describe the stakeholders, how they arrived at it, and anything interesting that emerged in their process.
9. As a class, reflect on challenges and benefits of identifying diverse stakeholders. Talk to students about how this stakeholder identification activity can help their design project as it moves forward.
10. Ask students to capture and share their stakeholder identification.
11. Ask students to review and comment on each other's stakeholder identification focusing on gaps, questions, insights and potential problems.
12. Ask students to read the review of their stakeholder identification and consider how to integrate the review into their ongoing design project (if relevant).

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are learning outcomes is attained by the teaching activity the

Teaching for values in design

LINKS

MATERIALS:

[Direct and indirect stakeholder analysis worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Personal value reflection video](#)

[Peer feedback for responsible designers](#)

RELATED CASES:

[Stakeholder identification: Identifying direct and indirect stakeholders of an e-commerce site](#)

[Understanding future scenarios based on stakeholders and their values](#)

[Working with stakeholder value tensions](#)

following assessment activity can be carried out (in class or after class)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to do a peer feedback (authentic assessment) on each other's stakeholder identification. Ask them to comment and pose questions in relation to how the stakeholders were identified and how the stakeholder identification could play a role in their project.

Assess students' learning by asking them to record a group video on stakeholders (ipsative assessment) where they through a visual medium illustrate their insights into possible stakeholders beyond the direct users and how this might influence their product or process.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- showing they understand the diversity of possible stakeholders,
- showing they can reflect on the possible consequences of considering diverse stakeholders in their project.

REFERENCES

Friedman, Batya, Kahn Jr, Peter H., and Borning, Alan (2006). Value Sensitive Design and Information Systems. In: Doorn N., Schuurbijs D., van de Poel I., Gorman M. (eds) *Early engagement and new technologies: Opening up the laboratory*. Philosophy of Engineering and Technology Dordrecht: Springer.

Friedman, Batya, and Hendry, David (2019). *Value sensitive design: shaping technology with moral imagination*. Cambridge, MA: MIT Press.

Stakeholders values elicitation

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Research

SOLO TAXONOMY LEVEL:

Multistructural

••

TIME:

Short

SUMMARY

This teaching activity provides students with the skills to perform stakeholder interviews focusing on their values. Through the activity, the students apply methods for performing value elicitation interviews. They also learn how to analyse and explain stakeholder values, as well as contrast perspectives and understand that what people think of a product is subjective.

BACKGROUND

While students are usually introduced to methods for the elicitation of design requirements from diverse stakeholders, these methods do not necessarily address the stakeholders' underlying values. This teaching activity helps students to plan and perform elicitation activities with stakeholders that address values, and to analyse the results.

In the teaching activity the students practice the skills to plan and perform interviews with diverse stakeholders to elicit their values related to a specific product, system, or service, or to a set of similar products, systems, or services.

The activity is based on the Socratic questioning structure (Robinson, 2017), and the repertory grid and the laddering technique (Kelly, 1991) where the stakeholders are asked about their appreciation of one or more products, systems, or services. This is done by structuring the answers from the interviewees on three levels:

- attributes (e.g., 'light', 'hexagonal shape', or 'soft texture'),
- functions (e.g., 'simple to use', 'not expensive'), and
- values (e.g., 'control', 'ownership', or 'comfort'),

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By doing so, the students gain a deeper understanding of how values relate to consequences and attributes.

The teaching activity could also be used as an evaluation method to understand whether a designed product, system or service fulfills the goal to support certain values according to the stakeholders. In this case, the students should have identified and described the intended values of the design before performing this activity. At the end of the activity, they will compare their intended values with the values as experienced by the stakeholders.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- explain that underlying values cannot be addressed immediately,
- apply methods for performing value elicitation interviews using one or more products, systems, or services,
- plan a value elicitation activity with stakeholders in other projects,
- analyse and explain the outcomes of a value elicitation interview and describe their findings,
- contrast perspectives and subjectivity in product appreciation.

PREPARATIONS

- Arrange settings for group work (suggested size of the groups: 4 students).
- Briefly explain the protocol of the interview method to the students (described in the next section), Socratic questioning (Robinson, 2017) and the repertory grid and the laddering technique (Kelly, 1991).
- The introduction should be as concrete as possible and should focus on the activity rather than on the theory of the Socratic structure: the understanding of the relevance of the exercise usually takes place through practicing.
- Print the Value elicitation worksheet and hand out to the student groups (at least one copy per group).
- Gather one product, system or service or 2-3 of the same type in the case of comparison, e.g., 2-3 types of pens, coffee cups, mobile phones, an advertisement poster for a service, or a website.
- Walk through the process of the activity with the students: instructions, timeplan, worksheet, and expected outcome.

TEACHING ACTIVITY

The teaching activity can be done either during teaching time or as homework. If in class, the students will interview their classmates.

The activity is divided into three steps.

STEP 1: SETTING UP

If this activity is done as homework, the student explains the protocol to the interviewee. If it is done in class, the interviewees will already know the protocol.

If the product, system or service can be tried out (which is the preferred situation), then the interviewee should be able to try it for a few minutes (with strictly equal time for each product, system or service in case of comparison), e.g., 2 minutes for a pen, also providing a sheet of paper to suggest experiencing writing. If the product, system or service is not available or does not exist yet, then a picture or a rendering should be provided.

Once the interviewee has “experienced” the product, system or service, it is placed in front of the interviewee again. The interviewee is asked if s-/he likes the product, system or service or not (in case of a comparison, s-/he is asked which one is most preferred and which one is least preferred).

STEP 2: INTERVIEW

The student asks the interviewee WHY s-/he appreciates the product, system or service (or not).

All answers provided by the interviewee are used by the student to ask WHY the interviewee has provided such answers. The aim is to further explore the reasons for the answer. This is done iteratively. The exercise may last about 15 minutes if it is done during teaching time. If it is done as homework, the interview may last as long as time allows and as long as it seems that valuable insights are being generated.

Each answer of the interviewee is documented by the student on a Value elicitation worksheet, by writing down keywords on the sheet.

The links between keywords explicitly made by the interviewee are visually represented by lines denoting the relation between these WHYS (see the black continuous lines in the example in the Value elicitation worksheet). Each keyword should appear only once, even if the interviewee mentions it many times. In such cases, many links may reach the same keyword.

STEP 3: ANALYSIS

Once the interview is done, still using the same Value elicitation worksheet, the student creates relations (dashed lines in the example in the Value elicitation worksheet) by connecting values (Level 3: Values) and design attributes

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(Level 1: Attributes), design functionalities (Level 2: Functions), or both, following the links drawn during step 7. Based on these created relations (one may consider that the black lines are the paths the dashed ones can take), the student can explain how certain values are embodied in the design attributes, following the dashed lines..

If a few people (at least 2) have been interviewed on the same artefact, then the student can contrast the interview results to point out the subjective variety in value association. This demands four sessions of interviews: during two sessions, a student is an interviewer; during two sessions, the same student is an interviewee.

In case the teaching activity is conducted in class, the teacher may walk around during the interviews to make sure that:

- questions are asked respecting the Socratic questioning structure (it is good to regularly remind the students that non-Socratic questions are influencing the interviewee and therefore create a bias),
- the sheets are properly filled out (the three levels are clearly distinct, and so should be the categorisation of the keywords),
- the links between keywords are clearly drawn as well throughout the interview, not to forget any.

During the analysis, it is good to question students about paths on the worksheets (i.e., mental constructs) rather than keywords. Questioning the paths will lead to discussing both the value and the way these values emerged.

After the activity, the teacher may address one or two interviews as clear examples of value elicitation through Socratic interviews. This helps the students to remember the major elements of the approach.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to perform a round robin brainstorming activity (formative assessment) reflecting on the advantages and difficulties of performing a value elicitation activity with stakeholders, the different perspectives of the stakeholders and how this is expressed in their appreciation of a product.

Assess students' learning by asking them to perform a peer feedback (authentic assessment) on each other's filled-in worksheets focusing on their ability to apply methods for value elicitation interviews and allowing stakeholders to reveal

Teaching for values in design

LINKS

MATERIALS:

[Value elicitation worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Round Robin values brainwriting](#)

[Peer feedback for responsible designers](#)

RELATED CASES:

[Working with stakeholder value tensions](#)

their values.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- giving concrete examples of unexpected insights or results of performing value elicitation interviews and allowing stakeholders to reveal their values,
- discussing which relation between design attributes/design functionalities/value that has been established during the activity is most intriguing/interesting to them.
- analysing and explaining design attributes/design functionalities/value relations among interviewees.

REFERENCES

Kelly, George A. (1991). *The psychology of personal constructs*. London: Routledge

Robinson, Shannon Marie (2017). Socratic Questioning: a Teaching Philosophy for the Student Research Consultation. Retrieved 2021-04-20 at <http://www.inthelibrarywiththeleadpipe.org/2017/socratic-questioning/>

Mapping value landscapes

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Research

SOLO TAXONOMY LEVEL:

Extended Abstract

....

TIME:

Short

SUMMARY

This teaching activity broadens students' perception and understanding of all stakeholders concerned given a specific challenge, especially the multiple relations between them and the different values they hold and/or share.

By partaking in the activity the students will learn to relate a diverse range of direct and indirect stakeholders to the challenge at hand. They will learn to identify stakeholders' values and relate them to each other in a value landscape that visualises their position. They will also learn to reflect on the outcomes and the impact of kind of visualisation of the value landscapes.

BACKGROUND

In nowadays society, we are facing complex challenges that can no longer be addressed by individual designers or design teams. Addressing challenges such as sustainability, the energy transition, and obesity requires a multi-stakeholder approach.

When working on such challenges, students should be aware of and understand all the direct and indirect related stakeholders that might have stake or influence the challenge, even though they might not be able to actually run a multi-stakeholder project and meet all these stakeholders. Hence, students require competencies to explore the broader perspective on people and the societal context in which products, systems, or services will be integrated.

In case students lack these competencies, they might not consider the ripple effect of their designs, which could have unforeseen consequences, such as excluding specific user groups. Moreover, with such complex issues, there is a fair chance their design solution will be experienced as rather

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naïve, or their design will never end up in practice, if they ignore the multistakeholder perspective.

In order to gain such a broader perspective on people and the societal context, they can create a stakeholder value landscape. A value landscape visualises the (key) stakeholders and beneficiaries related to the challenge/topic at hand, as well as the key values that they hold and share and how they differ between the different stakeholders.

The stakeholder value landscape aims at showing basic values, which Schwartz calls those trans-situational goals that guide people to live their lives (Schwartz et al., 2012), but it also shows other meaningful and valuable relations stakeholders have, both intangible (e.g. needs, feelings, expressions), tangible (goods and services), financial (money), or in the form of information.

Creating stakeholder value landscapes can be done in various ways, depending on the topic at hand, the intended outcome and the availability to meet stakeholders. A very well known example is the “value flow model” by Den Ouden and Brankaert (2013), although they put less emphasis on basic values. There are many more (expressive) forms of value landscapes that can be made to explore the challenge. See the provided slides for various examples.

The mapping is best done after having done the initial research phase so students can have some understanding about the stakeholders involved.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- identify the different direct and indirect stakeholders to the challenge at hand and the values they have and bring in,
- relate all stakeholders and their (related) values, by mapping them in a value landscape,
- identify the various types of relations between the stakeholders concerned, based on their different values, joint interests and concerns, and impact they might have on the project and the other stakeholders involved,
- identify which form and expression of mapping fits their project and purpose, i.e. they are able to relate content and expression.

PREPARATIONS

- Select the type of visualisation
- Decide upon the kind of visualisation(s) to use for making the mapping. Value Landscapes can be made in various

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ways, from simple paper sketches to acted-out spatial mappings. All types of visualisations have their own benefits and advantages related to the expertise students have, the complexity of the challenge, the availability of the stakeholders concerned, the preference for a 1st or 3rd person perspective, the creativity used and the time available to make the mapping. Examples of different ways of mapping Value Landscapes can be found in the provided slides. These examples and their underlying rationale support teachers in selecting an appropriate type of mapping.

- Select an appropriate space giving the selected type of mapping, e.g. the acted-out spatial mapping requires a fairly large empty space, whereas a paper sketch requires a table. Make sure to have enough space for all participants to actively contribute. Gather all necessary materials, e.g. for the acted-out spatial mapping you need a photo camera to document the mapping, for expressive landscapes you need tinkering materials, and for paper mappings you need the right paper and pens. When everything is collected, prepare the space for the activity.
- Prepare a short presentation on mapping value landscapes, elucidating the different value flows and relations they can have, and showing a few examples of value mappings. Include an example of a completed session using the tools the students will also use, in order for them to gain an understanding of the activity planned.
- Collect the suggested papers on human values (Schwartz, 2012, 2017; Schwartz et al., 2012) and human scale development (Max-Neef, 1991), which students will use during the mapping activity, and provide them to the students.

TEACHING ACTIVITY

Initially, this teaching activity focuses on guiding students to map a value landscape. If students become more experienced, they can also facilitate workshops with external stakeholders to have them map value landscapes.

STEP 1: EXPLANATION ACTIVITY AT THE START

The students are introduced to the topic of value landscapes, with a short presentation about the purpose of making value landscapes, and what kind of relations the stakeholders can have, including showing some example maps of value landscapes.

Moreover, the students are introduced to related theories, including human values (Schwartz, 2012, 2017; Schwartz et al., 2012) and human scale development (Max-Neef, 1991) which they will use during the mapping activity.

The tools and the procedure are explained, including showing

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an example of a completed session (a visualised value landscape), in order for students to gain an understanding of what they are supposed to do during the activity. A clear time frame is given for the activity.

STEP 2: MAPPING A VALUE LANDSCAPE

Students start with briefly stating the challenge at hand for which they want to make a value landscape, as well as the purpose of their landscape, e.g. to make an overview of the existing situation (which stakeholders are actually involved), of the preferred situation (which stakeholders do the students want to have involved), or the possible situation (which stakeholders could potentially be involved). As a design exercise, it is recommended to start with the first (actual) and end the exercise with the latter (possible).

Students start with identifying and visualising key stakeholders. It is beneficial to have students working in teams to have more creative brainpower to create these mappings.

Thereupon, they identify and visualise the stakeholders and their interrelations, which can have different forms: human values (Schwartz, 2012, 2017; Schwartz et al., 2012), human needs and satisfiers (Max-Neef, 1991), intangible values (e.g. needs, feelings, expressions, ideas, reputation, ...), tangible values (goods, services, ...), financial values (money, bitcoins, activities, ...), or information.

The students will critically evaluate the mapping and imagine who is missing and include those stakeholders in the mapping. Are there any non-targeted users missing, are marginalised groups missing, are opponents of the project missing, are silent witnesses missing, are potential future stakeholders that might be impacted by the challenge missing? Students also have to look at micro, meso and macro scale parties, where micro scale refers to specific individuals and macro scales to cultures and large communities.

STEP 3: REFLECTION

After all students have finished their mapping, the entire group of students reflects together with the teacher on all the value landscapes made by comparing their outcomes.

After this reflection, students apply the insights and update their mapping based on their joint reflection. If preferred, the students can also be asked to document their reflection and hand this in for feedback from the teacher (see Assessment).

After the activity, all students document their final mapping. In case they have made a spatial mapping, the result can be captured in photos or images. The students are asked for permission to use their output as examples in upcoming classes.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to write a reflective value report (formative assessment) where they present their value landscapes, understanding of stakeholders and reflect on how the relations between stakeholders might impact the project and the other stakeholders involved.

Assess students' learning by making them do peer feedback (authentic assessment) on each other's value landscapes. Ask them to comment and pose questions in relation to how it reflects an understanding of all stakeholders concerned given the specific challenge and how well it identifies stakeholders values and relations to each other.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- explaining how they would go about in identifying the different direct and indirect stakeholders and their values,
- discussing how stakeholders and values are related and what kind of relationships there may be between them,
- how form and expression of the mapping fit their project and purpose, i.e. that they are able to relate content and expression,
- demonstrating that they are able to pick the appropriate mapping for their purpose, i.e. they are aware of the relation between the form and expression of the mapping on the one hand, and the content and purpose of a mapping on the other hand.

REFERENCES

Max-Neef, Manfred (1991). *Human scale development: conception, application and further reflections*. New York: The Apex Press.

Schwartz, Shalom H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65.

Schwartz, Shalom H; Cieciuch, Jan; Vecchione, Michele; Davidov, Eldad; Fischer, Ronald; Beierlein, Constanze; Ramos, Alic; Verkasalo, Markku; Lönnqvist, Jan-Erik; Demirutku, Kursad; Dirilen-Gumus, Ozlem; & Konty, Mark (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, 103(4), 663–688.

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LINKS

SUGGESTED ASSESSMENT
ACTIVITIES:

[Reflective values report](#)

[Peer feedback for responsible designers](#)

RELATED TEACHING
ACTIVITIES:

[Value based reformulation of the design draft](#)

RELATED CASES:

[Mapping values in stakeholder relationships and manifesting values in moodboards](#)

Schwartz, Shalom H. (2017). The Refined Theory of Basic Values. In Roccas, S. & Sagiv, L. (Eds). *Values and behavior: Taking a cross-cultural perspective* (p. 51–72). Cham, Switzerland: Springer.

Ouden, den, Elke & Brankaert, Rens G.A. (2013). Designing new ecosystems : the value flow model. In C. Bont, de, P. H. Ouden, den, R. Schifferstein, F. Smulders, & M. Voort, van der (Eds.). *Advanced design methods for successful innovation* (p. 189–209). Den Haag: Design United.

Project values identification

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Synthesis

SOLO TAXONOMY LEVEL:

Relational

• • •

TIME:

Medium

SUMMARY

In this teaching activity, students will learn to identify the main project values at the end of a stakeholder research phase in the design process. Based on an analysis of empirical data, students can argue for the chosen project values, and through this argumentation relate back to the use situations that they have observed.

BACKGROUND

Becoming aware of the underlying project values at the beginning of a project – even before the idea sketching phase begins – is just as important as identifying the problem situation or design opening that students are designing for.

Upon entering the second half of the first diamond in the Double Diamond design process model (Design Council, 2021), students review their user research data through for example an affinity diagram (IDF, 2021) and identify four underlying project values. In this analysis phase, most experienced designers might have a gut feeling what the underlying project values are. However, this teaching activity makes it very explicit by enabling a design team to anchor what they identify as the four main project values in their empirical research.

The four project values should be regarded as provisional, and can serve as material for discussion throughout the design project. For example in a dialogue with stakeholders, where the student group later can introduce stakeholders to the project values, and negotiate the project values through an iterative process. Furthermore, the project values might serve as triggers for a discussion with stakeholders how to deal with value tensions, and how to concretely manifest the project values in a product, system or service.

LEARNING OUTCOMES

After the teaching activity the students will be able to:

- analyse empirical data and identify what the four main underlying values are in the project,
- argue why they chose these four project values, based on findings in empirical data,
- relate to the different stakeholder use situations that they have observed in their user research phase.

PREPARATIONS

- The students should have an ongoing design project in which they have already identified stakeholders, and are able to contact these stakeholders.
- The students should be done with the user/stakeholder research phase of their project, and they should have analysed the related data and gathered enough insights to formulate the problem or the design opening.
- In addition to this, the students should have performed at least some of the prerequisite teaching activities listed (see Related teaching activities).
- Distribute the project values worksheet and walk through the below process of the activity with the students.

TEACHING ACTIVITIES

The teaching activity is divided into three steps.

STEP 1:

Upon reviewing the results of, for example, an affinity map and/or a questionnaire and a description of a problem or a design opening, the students should identify all the values that they think are the underlying values in their design project.

STEP 2:

The students use the worksheet to filter out four of the values that they identify as the main project values.

Based on, for example an affinity diagram, the design team evaluates what are the most central values. The values should be selected according to what important stakeholders and the design team consider the highest priority and according to if/how these values might be integrated with other stakeholders' values.

STEP 3:

The students fill in the circle diagram in the worksheet. They should begin at the center, where they fill in the values and work their way outwards. In the middle circle, they fill in the arguments for why each value word is relevant, and in the

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outer circle, they fill in the example situation where the value word is relevant. This could for example be a description of a situation that they have observed in their user/stakeholder research.

When students have filled in the worksheet, they can send it to the stakeholder(s) and ask them if they think that these four project values are the most important, and if they think that the design prototype should focus on those values.

After this activity, the students might go one step further, and negotiate the project values with the stakeholders. They might contact the most important stakeholders and bring the project values up for discussion as a set of provisional project values.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create a value-based video pitch (summative assessment) focusing on presenting their worksheet to stakeholders along with their analysis of empirical data, argument for its four project values and relations to use situations. They should end the pitch by posing some questions that bring project values up for discussion with stakeholders.

Assess students' learning by asking them to create a timeline of the values within the design process (ipsative assessment) focusing on how values evolve through the interactions with stakeholders containing 1) values evolving from empirical data, 2) values change evolving from working with values identification through the worksheet, 3) values change evolving from presenting and discussing the worksheet with stakeholders, and 4) the values found in the final design prototype.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- analysing empirical data to identify main underlying values in the project with stakeholders,
- arguing for the chosen project values based on use situations and interaction with stakeholders,
- presenting the development of project values to stakeholders in a convincing and clear format that opens up for further discussion and interaction with stakeholders.

LINKS:

MATERIALS:

[Project values worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Video pitching for responsible designers](#)

[Historical value timeline](#)

RELATED CASES:

[Identifying the designer's, the design team's and the stakeholder's values](#)

[Fostering an identity as a responsible designer among students](#)

REFERENCES

Design council (2021). The double diamond design model. Retrieved on 2021-04-15 from <https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>

Interaction design Foundation (IDF) (2021). Affinity Diagrams – Learn How to Cluster and Bundle Ideas and Facts. Retrieved on 2021-04-15 from <https://www.interaction-design.org/literature/article/affinity-diagrams-learn-how-to-cluster-and-bundle-ideas-and-facts>

Value-based reformulation of the design draft

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Synthesis

SOLO TAXONOMY LEVEL:

Relational

• • •

TIME:

Short

SUMMARY

This teaching activity enables the students to identify and characterise the toned (explicitly mentioned) and untuned (not explicitly mentioned) values embedded in a design brief from a client, to analyse the design brief in light of the toned and untuned values, and to evaluate and adapt the design brief based on the complete set of values. The outcome gives the student/group the opportunity to iterate the design brief based on the value landscape map.

BACKGROUND

To our experience, students have a hard time critiquing design briefs and maps (e.g., value landscape map, mindmapping), as well as assessing the values in a design brief they receive. They tend to take what is explicit for granted and to ignore the untuned. A design brief is defined here as the formulated demands and expectations of the project provider, e.g., the client.

This activity teaches students to work with toned and untuned values in a design brief. By “toned” values, we mean values that are explicitly mentioned in the design brief (such as the available resources of each stakeholder involved in the project). By “untuned” values, we mean values that are not explicitly mentioned in the design brief, yet that are implied; taking them into account may impact the project (such as power relations among stakeholders).

The aim is not to broaden the design brief, but to make better informed decisions on which values to take into account in the design process.

The teaching activity is performed after the Mapping value landscapes teaching activity, which results in a direct and indirect stakeholder analysis and a value landscape map, that

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is, the relations, objectives, ethical stances of stakeholders involved in the design project.

The students analyse the value landscape map, which enables them to characterise untuned relations, and may lead to an evaluation and adaptation of some aspects of the design brief.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- identify and characterise the tuned and untuned values embedded in a design brief,
- analyse a design brief in light of the tuned and untuned values,
- evaluate and adapt the design brief based on the complete set of values.

PREPARATIONS

- The students should have completed the teaching activity Mapping value landscapes, resulting in a value landscape map consisting of all stakeholders involved in the design project. For this activity, the value landscape map is the resource the student/group starts to work with.
- The students should have access to a design brief (developed by themselves or a client).
- Print students' documented value landscape map or ask them to bring a printed copy to class.
- A few coloured pens are needed to mark out what characterises the untuned values, and to determine the new relations among stakeholders. See the provided example of a value-based reformulation of a design brief.
- The same value landscape map should be used for the entire activity, as compiled information progressively contributes to the finding of new paths through untuned.
- The teacher walks through the process of the activity with the students: instructions, timeplan, and expected outcome.
- The students can work individually or in groups.

TEACHING ACTIVITY

The teaching activity consists of four steps.

STEP 1: IDENTIFY AND CHARACTERISE THE TONED AND UNTONED VALUES EMBEDDED IN THE DESIGN BRIEF

The student/group identifies each relation in the value landscape as described by the design brief. The path resulting from these relations forms the "original path".

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The student/group identifies each non-drawn relation in the value landscape, i.e., they discuss if there is any possible relation or influence between two entities for which there is no drawn relation in the original map. For example, if in a multi-stakeholder project, two stakeholders are not yet related, can we imagine any kind of power/financial/cultural relation between them? The students describe (the not explicitly mentioned) values. The highly plausible and credible relations are evaluated, while others may be further adapted or ignored.

Once the diagram is completed with the untuned values, the student/group constructs other paths to complete the value landscape map. Each path should be analysed with regards to the values it relies on.

STEP 2: ANALYSE THE DESIGN BRIEF IN LIGHT OF THE TONED AND UNTONED

The student/group presents the findings, especially demonstrating what was untuned, and explaining the way their own understanding of the design brief has changed in view of all relations, both originally tuned and untuned.

STEP 3: EVALUATE AND ADAPT THE DESIGN BRIEF BASED ON THE COMPLETE SET OF VALUES

By assessing the design brief considering the tuned and the untuned, the student/group can pinpoint the new opportunities. Then the student/group can adapt the design brief accordingly, by picking one path on the value landscape map. This path illustrates the narrative of the updated design brief.

Then this path should be compared with the “original path” from Step 1. This comparison leads to an evaluation of the most relevant and satisfying path in terms of stakeholders’ values as well as the student/group’s own.

STEP 4: PRESENTATION AND REFLECTION (OPTIONAL)

The students present their result in three parts:

- the original design brief (if this one is different for each student/group),
- an explanation of the untuned values,
- the rephrased design brief.

The teacher may invite the students to reflect upon the impact of this teaching activity on the rest of the design project.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

Teaching for values in design

LINKS

MATERIALS:

[Example of a value-based reformulation of the design brief](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Values exhibition or public workshop](#)

[Self assessment for responsible designers](#)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to hold a value-based exhibition or public workshop (authentic assessment) presenting 1) the original design brief, 2) changes in the value landscape and 3) the evaluated and adapted design brief in order to discuss it with potential stakeholders.

Assess students' learning by making them write a self-assessment with a focus on values handled in an activity (formative assessment) focusing on how and why values changed from the original design brief to the rephrased design brief, highlighting the toned and untuned values and how they evaluated and adapted the design brief based on those.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- discussing the difference between toned and untuned values,
- adapting the design brief in the light of the toned and untuned values to better incorporate a complete set of values,
- reflecting on how values were taken into consideration for making choices between the original and rephrased design brief.

The game changer

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Synthesis

SOLO TAXONOMY LEVEL:

Extended Abstract

• • • •

TIME:

Medium

SUMMARY

This teaching activity enables students to imagine via personas how different stakeholders might receive their products, systems and services in terms of I) which values they perceive are associated with the product, system or service, and II) what kind of role that the product, system and service might play in their own lives as a “game changer”.

BACKGROUND

Designers and developers need to take responsibility and create products, systems and services that lead to positive environmental and social change.

Nudging (Thaler & Sunstein, 2008) can be a way of creating change through a product, system or service because nudging encourages people to act differently in ways that promote positive changes, sometimes in very unconscious ways, because of how salient qualities and features might influence behaviors.

However, when designing for change, designers may tend to focus on designing for stakeholders who are already ready to become change agents. There might even be a tendency to design for some stereotypes in that regard. For example, when producing stereotypes around vegans and view them as “natural” change makers, when it comes to environmental issues.

Not everyone might be inspired to use new products, systems or services that contribute to change. Simply because they are not motivated, and cannot associate themselves with being change makers. For example, why would a person who is into bodybuilding start to eat less meat, because it is good for the environment? Especially if the consensus within the bodybuilding environment is that protein contributes to

Teaching for values in design

building muscles, and that meat contains a lot of protein.

However, what if a new design, or the way that a product, system or service is introduced, could change a consensus within a specific group of stakeholders? An example of this is given in the video *The Game Changers* (2019) where bodybuilders are convinced to switch to a plant-based diet. This is an interesting example of how visual language, combined with celebrity presence and expert knowledge might convince a group of stakeholders to change both convictions and their resulting behaviors. It basically changes the game for them.

In this teaching activity, students will identify a stakeholder group, who they do not immediately recognise as the “natural” users of their product, system and service.

Based on empirical research on a specific stakeholder group, students create personas (see Grudin et al., 2002, and Guan et al., 2021) that could be part of this “radical”, but potential new stakeholder group. Students will then imagine how their product, system or service might create new ways of being and acting in the world from the point of view of the stakeholder.

When imagining this, students will judge what kind of visual material and storytelling might be the most convincing in relation to the selected stakeholder(s).

Finally, when students have created visual material, e.g., a video, that works like a commercial for their product, system or service, they will have an ethical reflection on how they argue for the change that their product, system or service might create in the stakeholder’s life.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- create one or more personas, based on data and insights from empirical research of a selected stakeholder group,
- imagine how their product, system or service might contribute to change in a specific stakeholder group and their environment,
- judge which kinds of visual and verbal argumentation can convince this stakeholder group to change or contribute to change,
- ethically reflect on the visual and verbal argumentation used.

PREPARATIONS

- This teaching activity happens in multiple steps, and forms a kind of mini-process within the second half of the

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Double Diamond design process (Design council, 2021), where an individual student or a student team 1) has identified the problem or design opening that they design for, 2) has come up with a design concept, and 3) are at a point in their design process where they reflect upon how they might reach a wider and more diverse group of stakeholders with their product, system or service.

- The teacher should outline the below multi-step process in a way where students can work independently on each step.

TEACHING ACTIVITY

STEP 1: IDENTIFY STAKEHOLDER GROUP

Students should identify a stakeholder group that they do not immediately think will identify with the values and vision behind their product, system or service.

Before this activity, students should have done some empirical research on this stakeholder group to get a grounded understanding of their mental models, their assumptions, convictions and values (e.g., in the teaching activities Listing stakeholders and their values, Mapping Value Landscapes, or Stakeholders values elicitation).

STEP 2: CREATE PERSONAS

Based on this research, students should create one or more personas that reflect and sum up the findings of their empirical research. For inspiration, see the provided Persona worksheet.

STEP 3: CREATE SCENARIOS

Based on the personas, the students should create a scenario in the shape of a 1-2 minute video that works like a commercial for their product, system or service. The video should convince members of their stakeholder group (the personas) in a way that they perceive the product, system or service as a “game changer”.

STEP 4: REFLECTION

Finally, students should have an ethical reflection on how they communicate with the selected stakeholder group, and how they argue for change through convincing visual material and the arguments, manifested via narratives in their videos.

The video *The Game Changers* (2019) can be used as an example of an interesting narrative that speaks to a certain set of values shared in a particular stakeholder group: the body building environment.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activity can be carried out (in class or after class).

Teaching for values in design

LINKS

MATERIALS:

[Persona Worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Values exhibition or public workshop](#)

[Self assessment for responsible designers](#)

RELATED TEACHING ACTIVITIES:

[Listing stakeholders and their values](#)

[Mapping value landscapes](#)

[Stakeholders value elicitation](#)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to record a personal video on their stance on the use of technology to make positive social and environmental change by nudging people.

Assess students' learning by asking them to perform a round robin brainstorming activity (formative assessment) reflecting upon how the visual materials and verbal arguments used in their videos may convince the selected stakeholder group to change or contribute to change, and ethical implications on such approaches.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- describing how insights from empirical research served as foundation when creating personas.
- explaining how their choices of visual material and verbal argumentation could convince this stakeholder group to change or contribute to change,
- reflecting upon ethical implications of using communication for change-making by nudging people.

REFERENCES

The Game Changers (2019, June 28). The Game Changers Official trailer [Video file]. Retrieved from <https://www.youtube.com/watch?v=iSpglxHTJVM>

Design council (2021). The double diamond design model. Retrieved on 2021-04-15 from <https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>

Thaler, Richard H; and Sunstein Cass R. (2008). *Nudge: Improving Decisions about Health, Wealth and Happiness*. New Haven, CT: Yale University Press.

Boztepe, Susan (2007). User value: competing theories and models. *International Journal of Design*, 1(2), 55-63.

Fogg, B.J. (2009) A behavioral model for persuasive design. In Persuasive '09: *Proceedings of the 4th International Conference on Persuasive Technology*, 1-7.

Grudin, Jonathan; and Pruitt, John (2002). Personas, Participatory Design and Product Development: An Infrastructure for Engagement. *Proceedings of participation and design conference (PDC 2002)*, 144-161.

Guan, Kathleen Wenyun; Salminen, Joni; Nielsen, Lene; Jung, Soon-gyo; and Jansen, Bernard J. (2021) Information Design for Personas in Four Professional Domains of User Experience Design, Healthcare, Market Research, and Social Media Strategy. In *Proceedings of the 54th Hawaii International Conference on System Sciences*, 4446-4455

Constructing value-based design requirements

SPECIFICATION

PILLAR:

Designers & Stakeholders

DESIGN PHASE:

Synthesis

SOLO TAXONOMY LEVEL:

Relational

• • •

TIME:

Short

SUMMARY

In this teaching activity, students will learn how to analyse their identified project values and, based on those, construct specific design requirements. In doing so, the value judgments involved will be explained in an explicit, debatable and transparent way. Value judgment is here defined as the designer's opinion about whether something is good or bad, right or wrong. Making these value judgments explicit allows for relating them to the judgments of others.

BACKGROUND

As values are general in nature it can be hard for students to make them concrete and incorporate them into design work. In this activity the students will learn how to analyse the identified project values and construct specific design requirements, which play an important role in guiding a design process. The teaching activity is an adaptation of a method originally developed by Van de Poel (2013).

In the teaching activity, the students formulate a value hierarchy consisting of three levels: 1) the project value (identified in a previous teaching activity), 2) the design objectives, and 3) the specific design requirements. By constructing a value hierarchy, the identified project values are systematically translated into design requirements, and the value judgments involved become explicit, debatable and transparent. Value judgment is defined here as the designer's opinion about whether something is good or bad, right or wrong. Making these judgments explicit allows for critical reflection upon the translations made, and enables the debate among the stakeholders involved.

Moreover, a value hierarchy may be helpful in pinpointing exactly where there is disagreement about the specification of values in design. A value hierarchy makes design choices,

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and especially the implied value judgments, more transparent to other stakeholders, which is important because design usually impacts on others besides the designers.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- analyse the identified project values and construct specific design requirements,
- explain the involved value judgments in an explicit, debatable, and transparent way,
- relate the value judgments to the judgments of other stakeholders.

PREPARATIONS

Before running this teaching activity, the students should already have identified their project values.

- Arrange settings for group work, and prepare the worksheet provided.
- Ask the students to put the list of identified project values in front of them.
- Introduce the concept of the value hierarchy and what the three levels stand for (values, design objectives, design requirements), and provide examples of value hierarchies.
- Walk through the process of the activity with the students: instructions, timeplan, worksheet, and expected outcome.

TEACHING ACTIVITY

During the teaching activity the students develop a three layered value hierarchy through a systematic translation of a project value into more specific design requirements.

The upper layer of the value hierarchy consists of a project value, followed by an intermediate layer of design objectives, and then a more specific layer of design requirements at the bottom.

The upper level, that is, the project value, has been identified by the students before this teaching activity starts.

The integration of values is done in a two-step process and documented in the worksheet provided by the teacher.

STEP 1: ANALYSE A PROJECT VALUE AND CONSTRUCT ONE OR MORE DESIGN OBJECTIVES

Design objectives here refer to properties, attributes or capabilities that the product, system or service should possess. Such objectives may include striving to e.g. “maximize safety” or “minimize costs” without a specific target.

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Example: When designing a house for elderly people, the value “elderly autonomy” can become the objective “safe home”.

STEP 2: CONSTRUCT SPECIFIC DESIGN REQUIREMENTS

The second step is to turn the design objectives into more specific targets, here referred to as specific design requirements. The requirement should be more specific with respect to A) the scope of applicability of the objective, B) the goals or aims strived for, and C) the actions or means to achieve these aims.

Example: When designing a house for elderly people, the objective “safe home” can be translated into the requirements “no doorstep indoors”, “10 cm heightened toilet seat”, etc.

See the provided worksheet for an example of a value hierarchy and how to formulate design objectives and design requirements.

The students will create one or more value hierarchies by applying the project values identified as part of the design projects that they are working on, or a design case provided by the teacher.

The students present their value hierarchies and design requirements in class, and explicitly describe their value judgments and how they relate to stakeholders. Other student groups comment upon the outcome.

In case this teaching activity is part of a whole course, in the final presentation of the design project the students ought to refer to the design requirements and describe how they played a role in their design process.

The students may also be asked to formulate evaluation criteria based on the design requirements.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students’ learning by making them do peer feedback (authentic assessment) on each other’s value-based design requirements. Ask them to comment and pose questions in relation to how well design requirements, design objectives and values are connected and how convincing the value judgment of the designer is.

Assess students’ learning by making them write a self-assessment with a focus on values handled in an activity (formative assessment) focusing on describing and arguing for the movement from values to design objectives and to design requirements. And reflecting on the value judgments

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LINKS

MATERIALS:

[Value hierarchy worksheet](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Peer feedback for responsible designers](#)

[Self assessment for responsible designers](#)

RELATED CASES:

[Deepening understanding of values before creating value based design requirements](#)

[Fostering an identity as a responsible designer among students](#)

made and to what extent it can be said to be explicit, debatable and transparent.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- describing the construction of design requirements from objectives and values in a way that highlights the value judgments made,
- explaining the involved value judgments in an explicit, debatable, and transparent way,
- reflecting on how the designer's opinion about whether something is good or bad, right or wrong can be made explicit, debatable, and transparent so that they might be related to the judgments of others.

REFERENCES

Van de Poel, Ibo (2013). Translating Values into Design Requirements. In: Michelfelder D., McCarthy N., Goldberg D. (Eds.) *Philosophy and Engineering: Reflections on Practice, Principles and Process*. Philosophy of Engineering and Technology. Dordrecht: Springer.

Visualising values in design with mood boards

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Relational

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TIME:

Short

SUMMARY

This teaching activity challenges students to explain and suggest implementations of values in their design projects through the use of mood boards. In doing so, the values behind a product, system or service become more explicit and obvious to stakeholders.

BACKGROUND

The underlying values in products, systems or services are manifested in use through e.g. their visual appearance, the symbolic language associated with them, or the different elements that they consist of. The underlying values may encourage and discourage people to act in certain ways when they interact with a product, system or service.

A prerequisite for this teaching activity is that students work on a project and have already identified their project values. During the activity, the students are challenged to express the values and the intentions of their product, system or service through visual means in order to support the prototyping process.

It is important that the students are able to reflect upon how they might integrate, embody and manifest values in their design. If students are not able to find ways of embodying values in a prototype, the values behind the product, system or service might not be obvious to the direct and indirect stakeholders.

Thus, in this teaching activity the students use a mood board as a prerequisite for a prototyping process to reflect upon how they would like their design to “speak” to different users and how their products, systems and services influence user behaviours and lifestyles. The visual representations of values are collected in mood boards (a visual presentation or a

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collage that communicates a concept or an idea) that inspire further development of prototypes.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- illustrate and explain how their products, systems or services should manifest and embody their project values,
- create a mood board that can serve as inspiration for how they might implement values in their products, systems and services.

PREPARATIONS

Before running this teaching activity, the students should already have identified their project values. They work in groups, and this activity is a collaborative effort.

- Ask the students to bring a list of project values that should be prominent in their design project. The list of values could also consist of a prioritised list of stakeholder values that were discovered through an analysis of empirical data from user/stakeholder research.
- Arrange settings for group work. The students should preferably work in groups of 3–5 people.
- The students should bring their laptop with access to the internet, so that they can search for image material online.
- Furthermore, students should be able to work in a program, like Miro, where they can create some sort of inspirational bulletin board with a collection of images.
- Prepare an online platform used as a shared repository (e.g. Miro, Mentimeter, Wordcloud) to which the students can submit value words. The shared repository will be used in the last part of this activity, when the students review each other's mood boards in class and submit the words that they associate with the visual materials.

TEACHING ACTIVITY

The teaching activity consists of six steps.

STEP 1:

Ask the students to search for image materials that somehow capture, manifest and symbolise their project values. The following steps (2–6) are done as a way of adding to and “thickening” their mood boards, and expanding their mood boards that might end up being a bit messy and large.

The image materials can:

- consist of photos of situations where people are engaged with social interactions or other kinds of activities that illustrate the project values,

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- be symbols or icons that can help identify project values. For example, a lock symbol might identify security,
- in some cases also display functionalities from other products, systems or services that the students think manifest one or more of the project values,
- consist of colors and typefaces that students think illustrate the project values.

Note: The focus should be put on visuals, they should not collect single words. If the teacher wants the students to work with word associations, then they can do the teaching activity Values clustering for developing students' value vocabularies.

STEP 2:

The students might also consider how the design “speaks” to the user through slogans, instructions how to use the design or small paragraphs with descriptions of the design, if the design was to be represented on a web site. Such sentences can be placed next to the visual materials that they talk about in the mood boards.

STEP 3:

When student groups have created their mood boards, they present them in class, one group at a time, to see how the other students perceive their mood boards.

The presentation of the mood boards should happen in silence – the group who presents should not mention the underlying values behind the visual material that they present. They should just present their mood boards in a manner that other students are able to view the visual materials and contemplate. Thus, all individual students who review the others' mood boards get a chance to reflect individually. The teacher asks the students to submit words into an online shared repository that the teacher has prepared beforehand – or work directly on mood boards that student groups share (e.g., via Miro or Mentimeter). The students type in the words that come to their mind when reviewing the mood board materials in class.

STEP 4:

Capture the shared repository of words, and at the end of the presentation, display the collection of words submitted to the shared repository (e.g. Miro, Mentimeter, Wordcloud) to the students. The result is used as a basis for discussion about the presented mood board. The purpose of the collection of words is to give the student groups some idea of how the visual material in their mood boards is perceived by others.

STEP 5:

The group that presented the mood board finally reveals to the class which value words they based their mood boards on. The group that presented gets to reflect upon the differences or similarities between the value words that they

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LINKS

SUGGESTED ASSESSMENT
ACTIVITIES:

[Video pitching for responsible designers](#)

[Values exhibition or public workshop](#)

RELATED CASES:

[Mapping values in stakeholder relationships and manifesting values in moodboards](#)

based their mood boards on and the word associations that their classmates came to think of when reviewing the mood board. Each group can also submit a written reflection on the differences of perception to the teacher.

The mood boards and their related word collections can be submitted to a shared platform and be further commented on by the other student groups and/or the teacher after the in-class presentation.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create a value-based video pitch (summative assessment) focusing on how their design "speaks" through presenting their mood board to stakeholders along with their explanations and suggestions for implementation of values in their design projects. They should end the pitch by posing some questions that bring project values up for discussion with stakeholders.

Assess students' learning by asking them to hold a value-based exhibition or public workshop (authentic assessment) asking stakeholders to interact with and review the mood board in similar ways as done in the teaching activity to get external evaluation and dialogue around how their design "speaks" and if it speaks in the right way.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- illustrating through mood boards how their design manifest and embody project values in such a way that it "speaks" clearly to an audience,
- explaining why their mood boards looks the way it does, and how this capture the values of the design in a clear and powerful way,
- describing the reception of their mood boards in class and the differences and similarities in value words and how that prompts them to change the mood board and how the design "speaks".

Understanding value tensions

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Relational

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TIME:

Short

SUMMARY

In this teaching activity, students will learn to explain what value tensions are, and how to apply the first steps of the Value Dams and Flows method to identify value tensions during the design process. By performing these first steps of the Value Dams and Flows method, students will learn to describe the potential harms and benefits of a product, system, or service, and relate these harms and benefits to values. Understanding value tensions is important because if a product, system, or service contains elements that go against some stakeholders' values, this could hinder appropriation.

BACKGROUND

Value tensions occur when different stakeholders have different values or value priorities, causing them to dislike elements of a product, system, or service that other stakeholders do like. To be able to design the product, system, or service in such a way that it is as much in line with all stakeholders' values as possible, the designer first needs to identify the value tensions.

It can be difficult for students to do this, because it requires an in-depth consideration of (the manifestation of values in) various design elements. As guidance in the process, this teaching activity provides an introduction to the Value Dams and Flows method (Miller et al., 2007), which is a method for identifying value tensions. By exploring what value tensions are, how the Value Dams and Flows method works, and taking the first steps toward working with this method, students will be equipped to identify value tensions in the future.

LEARNING OUTCOMES

After the teaching activity the students will be able to:

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- explain how values of different stakeholders (and even different values of one person) may be at odds with each other (value tensions),
- apply the first steps of the Value Dams and Flows method to identify value tensions during the design process,
- describe the harms and benefits of a product, system, or service, and relate these harms and benefits to values.

PREPARATIONS

- The students should have an ongoing design project, or they should be provided with a specific product, system, or service to consider for this teaching activity. The specific features and functionalities of the product, system, or service the students are designing should not be completely set in stone yet.
- Prepare the introduction about value tensions. The students can either watch the relevant part of the presentation by Batya Friedman (19:40–24:55) (Design Lab, 2018) or a similar introduction can be created. This introduction should include that (1) value tensions can exist at different levels, e.g. between individuals or between groups/organizations, and (2) designing for one value does not necessarily have to go at the expense of another; the designer can try to find a balance.
- Prepare an existing values vocabulary to share with the students as inspiration, either digitally or in printed form (such as the HuValue Wheel or the Schwartz Theory of Human Values). Alternatively, if students have already performed the teaching activity Stakeholders value elicitation, their worksheets from that activity can serve as inspiration for this activity.
- Decide whether step 2 of this activity will take place in class or (partly) as homework.
- Decide which stakeholders are relevant to consider for this assignment (e.g., only direct or also indirect stakeholders). If students have already performed the teaching activity Listing stakeholders and their values, they can consider (part of) the stakeholders they identified there.
- Decide whether the students will do the follow-up teaching activity Identifying and resolving value tensions after this activity. Depending on this decision, students should use either the provided worksheet 2A (only this activity) or worksheet 2B (to be continued in the follow-up activity). Also depending on this decision, hide slide 12 or 13 in the provided Values Dams and Flows slides that will be presented during the activity.
- Prepare settings for group work.

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- Walk through the process of the activity with the students: introduction to value tensions, worksheet 1, introduction to the Value Dams and Flows method, worksheet 2 (performing the first steps of the Value Dams and Flows method), discussion/feedback.

TEACHING ACTIVITIES

STEP 1: INTRODUCTION TO VALUE TENSIONS

Show the students the relevant part of the presentation by Batya Friedman or give a similar introduction.

Distribute to each student a (digital or analogue) copy of worksheet 1.

The students fill out worksheet 1, listing examples of value tensions at different levels. For reference, see the filled in example of worksheet 1.

Discuss the answers with the class.

Introduce the students to the Value Dams and Flows method (see also Miller et al., 2007, section 6). For this, the provided Value Dams and Flows slides can be used. These slides also form a guideline, and show examples, for the next steps in this teaching activity (the first steps of the Value Dams and Flows method). The slides can be distributed to the students.

STEP 2: FIRST STEPS OF THE VALUE DAMS AND FLOWS METHOD

Distribute to each group a digital copy of worksheet 2 (worksheet 2A for only this activity; worksheet 2B to later continue with the follow-up activity) as well as a filled in example of worksheet 2A or 2B (the same example as given in the slides). Throughout this step in the activity, students can refer to the example worksheet for inspiration.

The students open worksheet 2 in collaborative software (e.g., Google Docs) so that all group members can work on the same file.

Each student group brainstorms to identify potential benefits and harms that could result from system use for each relevant stakeholder group (e.g. different roles of the direct stakeholders of the product, system, or service). They note down the benefits and harms on worksheet 2. It is possible that a harm can also be a benefit, and vice versa.

The harms and benefits should be related to underlying values relevant to the product, system, or service that is being designed. If students have already identified project or stakeholder values in previous teaching activities, such as the Project values identification or Stakeholder values elicitation, they should use these values as a starting point to guide the identification of harms and benefits. If students have not previously identified relevant values, they can write

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down harms and benefits first, and relate these to relevant values as they go. As inspiration, provide students with an existing values vocabulary (such as the HuValue Wheel or the Schwartz Theory of Human Values).

Note: Harms and benefits should be potential harms and benefits based on potential features and functionalities, and should focus on elements that are changeable and not absolutely necessary for the product, system, or service. This means harms and benefits will be more fine-grained than the harms and benefits identified in the Listing stakeholders and their values teaching activity. For example, if a group is designing a bicycle, they may consider the harms and benefits of using a flag, a bell, a very bright paint colour, wide vs. narrow tires, etc., as opposed to considering the harms and benefits of using a bicycle, because this is already set in stone.

Each student group looks at existing products, systems or services similar to the one they are developing, as well as literature about these products, systems or services, to further complete their list of potential benefits and harms and their underlying values.

STEP 3: DISCUSSION/FEEDBACK

(Especially if there will be no follow-up activity to complete the Value Dams and Flows analysis:) Students present their worksheet to the class (or to another group) and discuss which tensions they believe may occur between different values and harms/benefits they identified. Together with the class (or the other group), they think about ways to resolve these tensions.

(Especially if there will be a follow-up activity to complete the Value Dams and Flows analysis:) Provide each student group with feedback about their harms, benefits, and underlying values. This can be done (a) by the teacher, (b) by exchanging worksheets between groups and letting student groups provide feedback to each other, or (c) by letting each student group present their worksheet to the class and having a plenary discussion. Questions to be considered include:

- Does the list include all obvious potential harms and benefits?
- Are the harms and benefits logically mapped to values?
- Are the harms and benefits indeed things that may occur as a result of system use?
- Were all relevant stakeholders considered?

Students can improve their work based on the feedback, and use these improved worksheets to continue the Value Dams and Flows method in the teaching activity Identifying and resolving value tensions.

LINKS

MATERIALS:

[Slides](#)

[Worksheet 1](#)

[Worksheet 2A](#)

[Worksheet 2B](#)

[HuValue Wheel](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Mindmapping for responsible designers](#)

[Reflective values report](#)

RELATED TEACHING ACTIVITIES:

[Identifying and resolving value tensions](#)

[Envisioning future scenarios](#)

RELATED CASES:

[Working with stakeholder value tensions](#)

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity, the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create maps of their identified value tensions (summative assessment) focusing on a) visualising and describing the harms and benefits of the product, system or service, and b) connecting harms and benefits to concrete values.

Assess students' learning by making them write a reflective value report (formative assessment) about value tensions and reflect on how these value tensions relate to or emerge from values as well as how values of different stakeholders may be at odds with each other.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- explaining value tensions (between whom can they occur; why are they important to attend to) and why they are important to take into consideration,
- describing the way stakeholders' values can affect their attitudes towards different elements of a product, system, or service, resulting in value dams and flows, Also describe the different steps in the Value Dams and Flows method that help to identify value tensions,
- reflecting on value tensions and their importance in regards to how a product, system, or service can contain elements that go against some stakeholders' values, and impede appropriation.

REFERENCES

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HuValue (2021). HuValue Tool. Retrieved 2021-04-15 from <https://huvaluetool.com/>

Schwartz, Shalom H. (2012). An Overview of the Schwartz Theory of Basic Values. Online Readings. *Psychology and Culture*, 2(1).

Miller, Jessica K., Friedman, Batya, Jancke, Gavin, & Gill, Brian. (2007). Value tensions in design: the value sensitive design, development, and appropriation of a corporation's groupware system. In *Proceedings of the 2007 international ACM conference on Supporting group work* (pp. 281-290).

Identifying and resolving value tensions

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Extended Abstract

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TIME:

Long

SUMMARY

In this teaching activity, students will learn to apply the second part of the Value Dams and Flows method to identify value tensions in their own project, and they will imagine ways to resolve these tensions in their design. This is important because if a product, system, or service contains elements that go against some stakeholders' values (even if they are in line with other stakeholders' values, i.e., if there is a value tension), this could hinder appropriation.

BACKGROUND

Value tensions occur when different stakeholders have different values or value priorities, leading them to dislike elements of a product, system, or service that other stakeholders do like.

To be able to design the product, system, or service in such a way that it is as much in line with all stakeholders' values as possible, the designer first needs to identify the value tensions. The designer can then consider how these tensions can be resolved, i.e., how to design for one value that is important to some stakeholders, without sacrificing another value that is important to other stakeholders. This is necessary to ensure that all stakeholders will appropriate the product, system, or service.

It can be difficult for students to identify value tensions, because (1) it requires stakeholder input about many different (potential) elements of the design, and (2) it requires a criterion for when conflicting stakeholder preferences are important enough to be considered a value tension. The Value Dams and Flows method (Miller et al., 2007) offers guidelines for this process. By applying the Value Dams and Flows method, students will be equipped to identify value tensions within their own project, and consider how these tensions

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could be resolved in their design.

LEARNING OUTCOMES

After the teaching activity the students will be able to:

- apply the Value Dams and Flows method to identify value tensions,
- imagine how these value tensions could be resolved in the design of a system, product, or service.

PREPARATIONS

- The students should have an ongoing design project in which they have already identified stakeholders, e.g. through the teaching activity Listing stakeholders and their values, and are able to contact these stakeholders.
- The students should have performed the prerequisite teaching activity Introduction to value tensions. As a result, they should have completed the worksheets provided in that activity, and they should be familiar with value tensions and the Value Dams and Flows method, which they will further execute during this activity. If necessary, refresh their memory using the Value Dams and Flows slides.
- Decide which stakeholders (and how many) should be involved in step 1.
- Decide how the stakeholder surveys will be designed in step 1 (e.g., if the survey is digital, decide which survey platform to use, such as Google Forms, and ensure that students will be able to view the response percentages for each answer option).
- Decide whether each of the steps will be performed in class or as homework.
- Prepare settings for group work.
- Walk through the process of the activity with the students: creating a survey for stakeholders, collecting data, identifying value dams and flows, identifying value tensions, imagining ways to resolve them, and (optionally) presenting their work.

TEACHING ACTIVITY

STEP 1: STAKEHOLDER SURVEY

The student groups open or take out their partially completed worksheet 2B from the teaching activity Introduction to value tensions.

Using this worksheet, students translate the (revised) harms and benefits and the underlying values to statements their

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stakeholders may agree or disagree with (also on worksheet 2). For example, the harm “GPS location is tracked” mapped to the value “privacy” could be translated to the harms-related statement “I feel like my privacy is being compromised if the system tracks my GPS location”. Further examples can be found in the Value Dams and Flows slides or in the example of worksheet 2.

Each student group creates a survey (either on paper or digitally, e.g. using Google Forms) including all their formulated statements, with a 5-point answer scale for each statement ranging from “strongly disagree”, “disagree”, “neutral”, “agree” to “strongly agree”.

The students distribute this survey among the relevant stakeholders.

STEP 2: IDENTIFYING VALUE DAMS AND FLOWS

The student groups identify value dams by identifying the harms-related statements to which more than 10% of stakeholders responded with “strongly agree”. (In Google Forms, the percentages per answer option are displayed on the results page.) The threshold percentage may be adjusted, for example depending on the number of respondents.

The student groups identify value flows by identifying the benefits-related statements to which the majority (> 50%) of stakeholders responded with “agree” or “strongly agree”.

STEP 3: IDENTIFYING AND RESOLVING VALUE TENSIONS

Each student group reflects on the tensions that may occur between the value dams and value flows they identified. If a value dam occurs for some element of their design (e.g., GPS location tracking), they should consider whether there is a tension with any of the value flows (e.g., getting personalised advice based on location). (If no value tensions occur due to a low number of value dams and flows, students can adjust the threshold percentages for dams and flows.)

Each student group lists the value tensions they identified in collaborative software (such as Google Docs), in a way similar to how they listed value tensions on worksheet 1 of the prerequisite activity Introduction to value tensions.

For each value tension, each student group imagines and notes down how their product, system or service could balance the value dams and the value flows. In other words, they attempt to resolve the value tensions.

Note: As an example of value tension resolution, refer back to the example from Miller et al. (2016) provided in the Value Dams and Flows slides.

STEP 4: PRESENTATION (OPTIONAL)

Each student group presents their work to the class. They discuss the value dams and flows they identified, the value

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Worksheet 1](#)

[Worksheet 2A](#)

[Worksheet 2B](#)

[HuValue Wheel](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Peer feedback for responsible designers](#)

[Applying knowledge to real-world example](#)

RELATED TEACHING ACTIVITIES:

[Understanding value tensions](#)

tensions they identified, and the ways they plan to resolve value tensions in their design. If they feel like they cannot resolve some or all value tensions (or if they feel like there are no value tensions at all), they explain why this is the case. (Alternatively, each student group can write a report containing the same information.)

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity, the following assessment activities can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to engage in peer feedback (authentic assessment) on each other's value tensions. Ask students to comment and pose questions in relation to the identified value dams and flows as well as the plan to resolve value tensions on the design.

Assess students' learning by asking them to apply their knowledge to real-world examples (authentic assessment). To do this, choose an existing product, system, or service. Ask students to write a plan for how they would perform a Value Dams and Flows analysis for that design (considering existing elements of the design, but also possible alternative elements). Then, ask them to imagine possible value tensions that could have occurred, and ways to resolve these tensions.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- applying the Value Dams and Flows method to identify value tensions in their project,
- imagining ways to resolve value tensions in their design and exemplifying this in concrete ways,
- reflecting on the potential consequences of leaving value tensions unresolved.

REFERENCES

Miller, Jessica. K., Friedman, Batya, Jancke, Gavin, & Gill, Bill (2007). Value tensions in design: the value sensitive design, development, and appropriation of a corporation's groupware system. *In Proceedings of the 2007 international ACM conference on Supporting group work* (pp. 281–290).

Exploring values through extreme worlds

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Extended Abstract

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TIME:

Short

SUMMARY

In this activity, students reflect on today's society and its underlying values, more specifically regarding values expressed and evoked through interactive technology, thus opening up a new design space. By designing products, systems, services and interactions in extreme worlds, students reflect on and discuss implicit assumptions regarding values. For example, what could our world look like if we all had dementia or we saw dementia as a blessing? Or what if autism was not seen as a disorder, but simply as another valued way of being in the world?

BACKGROUND

Most students are unintentionally including many implicit values into their designs. It seems hard to step out of one's world and question things that seem so natural and generally accepted, such as, for example, considering autism as a disorder. But also the values underlying more everyday situations, for example when interacting with interactive devices like smartphones and tablets, often seem determined by unquestioned boundaries of values related to hedonism, achievement and power.

Designing for extreme worlds is a technique that opens up new perspectives and possibilities by not taking commonly accepted starting points for granted, and questioning the status quo. This can be done by 1) changing paradigms and norms, e.g., designing for extreme worldviews, or 2) by focusing on different people to design for, e.g. designing for extreme characters.

- Extreme worldviews strongly deviate from prototypical and socially accepted ways of living, and are for now imaginary and speculative, such as a world where everyone has dementia, a world where the average age is

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150 years old, or a world where people live in hibernation 9 months per year. This way, conflicting values which we might take for granted can be questioned through designing in this world.

- Extreme characters are the opposite of prototypical characters from a target group, which often remain emotionally shallow during the design process. Instead, extreme characters have exaggerated emotional attitudes and character traits, such as a drug dealer, the pope or a 3-time Olympic triathlon champion. This way, character traits can be exposed which can be antisocial or in conflict with a person's status, thus questioning personal values we might take for granted.

On the one hand, this teaching activity can support opening up the design space and the creation of new ideas, and on the other hand it can support the awareness, reflection on and discussion of implicit values in design. Working with extreme worldviews and characters helps to reflect on and discuss implicit assumptions of new design ideas and concepts, by opening up new design spaces that trigger imagination and new views on values. It stimulates reflection on implicit values, questioning of trodden paths, as well as out-of-the-box ideation.

LEARNING OUTCOMES

After the activity students will be able to:

- design for the richness and variety of values, including negative, challenging and extreme aspects, thus opening up the design space within their projects,
- reflect in and on the underlying values of their designs,
- question and discuss the implicit values underlying the design brief and their designs.

PREPARATIONS

- Create a short design brief with the challenge the students will be designing for. Pick a topic for which it is easy to find existing design examples from a "common" context. For example, design a personal digital assistant (PDA)/calendar, a vending machine, or a tea ritual. See the slides provided for examples of design examples and design briefs.
- Choose one of the two extreme parameters to use: 1) extreme worldviews or 2) extreme characters, and adjust the design brief to make it fit for the extreme parameter. When using extreme characters, it works best when multiple characters are used in the class, where 1 character is assigned to a group of students. When using extreme worldviews, it is possible to choose to use 1 or multiple

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worldviews in the class. In the latter case, divide the class into groups and assign 1 worldview per group.

- Collect a few currently existing designs related to the topic and print out 1 design per A4 (an example of various PDA's/ calendars can be found in the slides provided).
- Create a time schedule for an in-class exercise depending on the amount of available time. For a short version, you can start with a 15 min explanation of the brief and the assignment. Afterwards, give students 1–1,5 hours to create a few 2D or 3D sketches. Plan for 1,5 hours in class to reflect on and discuss the underlying values of the created sketches in comparison to the values of existing designs.
- Distribute copies of the Schwartz overview of Human Values.
- Bring or ask the students to bring drawing and tinkering materials and tools to the class, including A3 paper, post-its, pens, pencils, magazines, scissors, glue, 3D scrap material etc.
- Prepare settings for group work (suggested group size: 3 students).

TEACHING ACTIVITY

STEP 1 (CAN BE DONE IN CLASS OR BE PROVIDED IN A DESIGN BRIEF):

Explain the design brief, the time schedule and the underlying rationale for this assignment.

Divide students in small teams of three and provide them with an extreme character or worldview for which they will design.

STEP 2 (CAN BE DONE IN CLASS OR AS HOMEWORK):

Ask the teams to create 3–5 quick design ideas for the provided character or worldview.

Let the students select one idea and develop this further, including its appearance and the way of interaction in relation to the underlying values the design should evoke (using the Schwartz overview of Human Values). Finally, let them create a short storyboard/scenario how the design is used. Depending on the materials used, this scenario can either be sketched by the team on an A3 paper, or acted out when the designs are presented and discussed.

STEP 3 (IN CLASS):

Let the teams briefly present their designs to each other. Meanwhile, all students will write down on a post-it which key value they associate this design with. After all presentations, the post-its with values are collected and attached to the designs.

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STEP 4:

The students develop a value map, by mapping all designs on the floor in correspondence with the Schwartz overview of Human Values, and placing designs with related values close to each other. Thereupon, ask the students to add the print-outs of existing designs (that were printed out on beforehand) to the value map and attach values to these designs too. While creating the value map, the students discuss the differences regarding the position of the designs on the value map, specifically the differences between their designs and the existing designs.

After all presentations, the mapping and the plenary discussion on values, a final discussion may take place in order to discuss the implicit values of existing designs, and the benefit of exploring the underlying values of extreme worlds.

The value map is documented and made available to all students for them to potentially include and discuss when reporting upon the process.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to do peer feedback (authentic assessment) with each other and discuss how relevant the design is within the perspective of extreme worlds, as well as how it differs from the prototypical world. Focus on highlighting how the perspective of extreme worlds can help open up the design space, trigger imagination and create reflection on implicit assumptions about values.

Assess students' learning by asking them to write a self-assessment with a focus on values handled in an activity (formative assessment) around their deliberate awareness of values in the design process, how they are manifested in products and how they impact the life of extreme characters. The review should focus on how extreme worldviews and characters help them reflect on implicit assumptions of design ideas and concepts, gain new views on values and question trodden paths, as well as out-of-the-box ideation.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- describing the underlying values of their designs and their impact on everyday life of both extreme and prototypical characters,
- reflecting on the impact of underlying values in design decisions and evaluations,

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Swartz overview of human values](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Peer feedback for responsible designers](#)

[Self assessment for responsible designers](#)

- arguing for how working with extreme worlds and characters help them open up the design space, trigger imagination and create reflection on implicit assumptions about values.

REFERENCES

Djajadiningrat, Tom J. P.; Gaver, William W.; and Frens, Joep W. (2000). Interaction relabelling and extreme characters: methods for exploring aesthetic interactions. *In Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques (DIS '00)*. Association for Computing Machinery, New York, NY, USA, 66–71.

van Dijk, Jelle and Hummels, Caroline (2017). Designing for Embodied Being-in-the-World: Two Cases, Seven Principles and One Framework. *In Proceedings of the Eleventh International Conference on Tangible, Embedded, and Embodied Interaction (TEI '17)*. Association for Computing Machinery, New York, NY, USA, 47–56.

Schwartz, Shalom. H. (1992). *Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries*. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 25 (p. 1–65). Academic Press.

Schwartz, Shalom H. (2017). *The Refined Theory of Basic Values*. In Roccas, S. and Sagiv, L. (Eds). *Values and behavior: Taking a cross-cultural perspective*. Cham: Springer.

Re-designing concepts for different cultures

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Extended Abstract

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TIME:

Long

SUMMARY

This teaching activity challenges students to adapt one of their design concepts to a different culture with different values. They do this by evaluating an existing design concept, hypothesizing which new values could apply, designing a new concept and evaluating the new design with people from the other culture. In doing so, students become aware of the complexity of values and the situatedness of values given a certain culture or setting.

BACKGROUND

Designers are often not aware of the implicit culture-related values they incorporate into their designs. Semantic meaning related to colour, forms, people, relations, etc. can be culturally specific and relate to social norms within a specific culture. Not being aware of these values can lead to embarrassing situations. For example, the translation of a Dutch Dick Bruna children's book about "Betje Big" (Poppy Pig) to Turkish (Betje Big'in, Dogum Günü) changed the connotation completely, since the pig is considered unclean in Turkey.

We are moving towards a global multicultural world, which is asking designers to be more aware of cultural values and norms. Researchers like Geert Hofstede, a Dutch organisational psychologist renowned in the field of intercultural studies, developed culture and organisation-related frameworks (e.g. Hofstede et al., 2010). These frameworks provide a starting point, but are not immediately transferable to a design. They do not say, e.g., whether colours and materials have the same connotation all over the world. That might require exploration and engagement with people from this culture during the design process.

This teaching activity supports students in getting an understanding of the role of aesthetics in their designs,

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regarding the appearance and interaction in relation to different cultural connotations. Through learning about and designing for different cultures than their own and having their designs evaluated by people from another culture, students are sensitised to these often implicit cultural values, and supported to include them more consciously in their design process.

Overall, this activity supports students becoming aware of and more competent in addressing the complexity of values and the situatedness of values given a certain culture or setting.

LEARNING OUTCOMES

After the activity students will be able to:

- hypothesise how a design concept might fit a specific culture,
- design a concept that is (more) appropriate for a specific culture,
- evaluate a design concept from a cultural perspective, using Hofstede's cultural dimensions theory and interviews with people coming from another culture than their own.

PREPARATIONS

- Divide students in groups of three.
- Create a page for every group to log their design journey on an online whiteboard platform (e.g., Miro or Mural).
- Ask every group to find one participant from another culture living in their country, e.g. an expat, willing to be interviewed. A live face-to-face interview is preferred, but if that is not possible an online interview is also an option.
- Provide students with information about Hofstede's theory on culture and organisations (Hofstede et al., 2012) and Schwartz's theory on basic human values (Schwartz, 2017).
- When running a course of multiple weeks, you might use the first few weeks to let the students read and discuss the different chapters of Hofstede's book. If limited in time, the students might access Hofstede's website (Hofstede, n.d) explaining the dimensions, which they can explore before the activity starts. Instruct them to read the papers and discuss the theory before they meet the participant.
- Ask the group to choose an existing design project, preferably a finished design project from one of the group members. Ask them to write a short explanation of the concept with a few images from that project, which they can include in their online whiteboard (using e.g. Miro or Mural) to explain the concept to fellow students.

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- Create a presentation/hand-out explaining the purpose of the activity, showing examples and instructions explaining the steps to take. See the provided slides for inspiration.

TEACHING ACTIVITY

The teaching activity consists of five steps (spread over different days/weeks).

STEP 1:

A kick-off meeting explaining the purpose of the activity, showing examples and giving instructions explaining the steps to take.

STEP 2:

Students are getting familiar with another culture by reading Hofstede's analysis of cultures. They can read the book or watch the short videos on the website. Additionally, every group has a 30-60 min interview with a participant from another cultural background, where they will listen to their experiences and anecdotes within their culture.

Before they meet the participant, they have to prepare the interview. Let them come up with questions regarding (past) cultural experience, both in work and private life. They can ask for stories and anecdotes, but they shouldn't ask the participant to connect to the theory him- or herself (that is step 3). Moreover, they should not refer to their design concept yet. That will be part of the next interview.

STEP 3:

Every student group connects the interview of the participant to the theoretical insights regarding this culture, and analyses their selected design project from the perspective of the targeted cultural context. Part of this evaluation is clarifying the mismatch between features of the current design and the new cultural context. Subsequently, students hypothesise which values should apply to the re-design.

STEP 4:

Every group re-designs their concept from the perspective of the culture of the participant and visualises the design in drawings, animations and/or prototypes. Afterwards, they discuss in an open conversation the design with the participant/expat, exploring in which way it does or does not fit their culture. They use the feedback to adjust the concept and create the final design.

STEP 5:

Students document the outcome of the different parts on their dedicated page (on the online whiteboard that was prepared). During class all the groups present their results (design and process), including the underlying rationale. Fellow students provide feedback on the whiteboard platform during the presentations, and the teacher provides oral feedback.

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After all the presentations and feedback given on the online whiteboard platform, a final discussion may take place in order to discuss the culture-related values of the different designs, the differences between cultures, as well as the experienced differences between Hofstede's theory and the interviews with the participants.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by making them organise a (online) value-based public exhibition for an international audience (e.g. the expats involved in the interviews). Ask them to focus on highlighting how the design was adapted to a different culture with different values as well as the insights and results from the evaluation.

Assess students' learning by asking them to write a self-assessment of values handled in an activity focusing on how their understanding of values changed from their own evaluation of an existing design concept to their evaluation of the new design with people from other cultures. Ask students to highlight in the self-review how and why they were sensitised to implicit cultural values, and were supported to include them more consciously in their design process. Frame the self-review through questions such as "What have you learned about cultures and values", "What role does culture play in design for you/your project?".

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on:

- explaining how values and culture are related,
- giving examples of how a design concept may be appropriate for a certain culture but not for another,
- describing how Hofstede's analysis of cultures can support the design for different cultures,
- evaluating the design concept from a cultural perspective, using Hofstede's cultural dimensions theory and interviews with people coming from another culture than their own.

REFERENCES

Hofstede, Geert; Hofstede, Gert Jan; and Minkov, Michael (2010). *Cultures and Organisations: Software of the Mind*. Intercultural Cooperation and Its Importance for Survival. New York: McGraw-Hill.

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Values exhibition or public
workshop](#)

[Self assessment for responsible
designers](#)

Hofstede (n.d.). Six dimension model of national culture. Retrieved 2021-04-15 from <https://geerthofstede.com/culture-geert-hofstede-gert-jan-hofstede/6d-model-of-national-culture/>

Schwartz, Shalom H. (2017). The Refined Theory of Basic Values. In Roccas, S. and Sagiv, L. (Eds). *Values and behavior: Taking a cross-cultural perspective*. Cham: Springer.

Envisioning future scenarios

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Ideation

SOLO TAXONOMY LEVEL:

Extended Abstract

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TIME:

Short

SUMMARY

In this teaching activity, students will generate future scenarios in order to imagine and analyse potential widespread consequences, long-term effects and societal impacts of their own or others' designs. The activity will lead students to envision at least one use or user scenario that goes beyond what they would normally describe as the intended use of their design. By applying their understanding of potential consequences and effects, they may rethink their designs and design decisions.

BACKGROUND

When focusing on users and user experiences, students may approach their own or others' designs from a single, narrow perspective without realizing its potential impact on a broader society. Evidently, designs can have widespread consequences and long term effects on various stakeholders beyond the stakeholders initially imagined, both in positive and negative ways.

If students lack an understanding of the broad impact and long term effects of their designs, they run the risk of inadvertently causing more harm than good in society.

For this teaching activity, envisioning prompts are used as a tool for developing future scenarios to analyse and explain a use or user situation based on four criteria (stakeholders, time, values, pervasiveness). Each envisioning prompt will draw students' attention to a particular socio-technical issue that is important yet easily overlooked (e.g., diverse geographics, political realities, obsolescence).

The teaching activity builds on the Envisioning Cards (Friedman & Hendry, 2012) developed by the Value Sensitive Design Research Lab at the Information School at the

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University of Washington. However, since these cards are not freely available, the main concepts are explained without requiring purchase of the cards.

LEARNING OUTCOMES

After the activity students will be able to:

- generate future scenarios in order to imagine and analyse potential widespread consequences, long-term effects and societal impacts of their own or others' designs,
- apply their understanding of potential widespread these consequences and long-term effects to potentially rethink their design and design decisions.

PREPARATIONS

- Prepare a handout of the provided envisioning prompts.
- Prepare a short introduction lecture on the importance of being conscious of the broad impact and long term effects of a design (see e.g. the teaching activity Introduction to Values in design). You may also want to use some examples of utopian/dystopian scenarios using different media such as text (e.g., Isaac Asimov's Foundation) or video (e.g., A trailer of the Black Mirror episode on parental surveillance, Netflix, 2017). Also, include the four criteria (stakeholders, time, values, and pervasiveness). See the provided slides for examples of envisioning activities for each of the four criteria and some example scenarios from the paper by Nathan et al. (2008).
- The activity can be done individually or as a group activity. In case of a group activity, arrange settings for group work (suggested size: 3-5 persons per group).

TEACHING ACTIVITY

1. Give the lecture that you have prepared.
2. Ask the students to select a project that they are developing as a group or that they have developed on their own, or present an example design case that they can develop a scenario for.
3. Walk through the process of the activity, instructions, timeplan, and envisioning prompts. Describe the expected outcome, which is at least one future scenario for the design, using one or more of the envisioning criteria, and a reflection on possible consequences for the design. The scenarios can be described in a short story or as a video scenario. See the provided slides for examples of short stories.

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4. The students imagine one or more possible future scenarios (as a short story or a video) for their designs by using one or more envisioning prompts pertaining to the four criteria (stakeholders, time, values, pervasiveness). They may develop both utopian and dystopian versions of the futures.
5. Highlight the fact that problems can be seen from multiple angles, and remind the students to think beyond the narrow utilitaristic design perspective.
6. Share and summarise insights from the teaching activity and ask students to reflect upon their own designs and whether they think the scenario warrants some design changes. Remind them to explore various problem solving strategies such as service design, infrastructures and policy making. This can be documented separately or as part of their design documentation.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assessing students' learning by asking them to apply their learning about future scenarios on a case study (summative assessment) by imagining and analysing potential consequences, long-term effects or societal impacts of a design through a value scenario using relevant envisioning criteria (including values) and prompts. Ask students to focus on use or user scenarios that go beyond what they would normally describe as the intended use of the design.

Assess students' learning by asking them to hold a value-based exhibition or public workshop (authentic assessment) presenting 1) the original design, 2) their envisioning prompts and their particular socio-technical issues 3) the developed future scenario and how it makes them rethink the designs.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

describing what envisioning criteria and prompts are relevant to apply for a specific case,

imagining potential consequences, long-term effects and societal impacts of a design through a value scenario that goes beyond what would normally be described as intended use, using relevant envisioning criteria (including values) and prompts,

analysing the potential consequences of a design using relevant envisioning criteria (including values) through a value scenario and providing suggestions for how to mitigate

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

[Envisioning cards](#)

SUGGESTED ASSESSMENT
ACTIVITIES:

[Case-based assessment for
responsible designers](#)

RELATED CASES:

[Understanding future
scenarios based on
stakeholders and their values](#)

negative consequences (e.g. in regards to re-design, further stakeholder dialogue, possible tensions) through rethinking the design.

REFERENCES

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Contextualising values through reflection-in-action

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Evaluation

SOLO TAXONOMY LEVEL:

Extended Abstract

••••

TIME:

Short

SUMMARY

This teaching activity aims to support students to explain and engage in reflection-in-action on values involved both in designs (output), for example, the qualities of the design that resonate with the values, and in designing (activity), for example, how the design engages others in the decision making. Through the activity the students will discuss how reflection-in-action can support thinking about values, explain and exemplify their reflection-in-action through the product, system or service or by the interaction with it.

BACKGROUND

In our experience, students seldom consider the act of making as a means for reflection, but rather as a way to demonstrate their ideas or concepts (which mostly takes place later in the design process). This teaching activity brings them to realise other uses of their design skills in the design process, namely reflecting-in-action on values engaged in the designs (output) and in designing (activity).

This exercise focuses on “making for exploration”, which is characterised by ambiguity and a lack of predetermined planning (Frens & Hengeveld, 2013), i.e., with no expected plan and result planned before starting making. Such making supports the designer to engage in a reflective dialogue with the material in order to ideate and reflect, and may therefore lead to reflection-in-action on values engaged in the design project.

In this teaching activity, the students are introduced to a value-based perspective (e.g., oppositions such as individualism vs. collectivism) or a worldview (for example, cognitive embodiment), and through making, the students reflect on the values and value stances addressed by the aforementioned value-based perspective. Instead of working

Teaching for values in design

towards an end product the focus in this activity is on the reflection-in-action.

LEARNING OUTCOMES

After the teaching activity students will be able to:

- explain and engage in reflection-in-action on values at stake in the design project,
- discuss how reflection-in-action supports thinking about values,
- exemplify their reflection-in-action through the artefact or by the interaction with it.

PREPARATIONS

- The making part of the teaching activity can be done either as a homework activity or in class, depending on the time and the resources at hand. We recommend it to be homework as it provides more time for the student to reflect and to iterate on the making. However, the process is globally the same.
- Prepare a presentation on a value-based perspective (e.g. oppositions such as individualism vs. collectivism) or a worldview (e.g., cognitive embodiment), see the slides provided.
- Prepare a fairly simple yet very open design topic (e.g., something to make tea, something to write) that may express the students own view and acceptance of the perspective. A more complicated project may lead students to focus on technical issues of the making rather on the value-based perspective. See an example of a design topic in the slides provided.
- If the making takes place in class, make sure that there is sufficient material or tools available. If the making takes place at home, remind the students that the important thing is not the result of the making, but the reflection taking place during the making. Remind the students to use already existing artefacts to ease and accelerate the making process.

TEACHING ACTIVITY

STEP 1:

Give the presentation that you have prepared.

Walk through the process of the making activity, instructions, and timeplan. The making should not require advanced skills to shape materials and technologies that the artefact is built of. Remind the students that the aim is to reflect in the making, not to be challenged to make. It can be advised to

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students to either use accessible materials and techniques (e.g., paper/cardboard modelling) or to use and transform already existing artefacts.

STEP 2:

During the making, the students should take a few notes, and document the process and details that have contributed to their own reflection. This documentation is not used in the final presentation but can be a useful material for later reflection-on-action.

The student should have time to reflect while making, which may demand a few (quick) iterations to reach a satisfying result. Satisfaction is reached when the student can use the artefact to exemplify, to reflect upon, and to assess (e.g., by defending a perspective) on a viewpoint regarding the inquired perspective or worldview.

STEP 3:

To present the work, each student should:

- summarise the aspects reflected upon while making through three keywords,
- briefly describe the result,
- critique the perspective or the worldview exemplified by the artefact in sight of the making experience,
- conclude by defending a position on the perspective or the worldview.

Each presentation should be short and to the point. It is not necessary to have an extensive discussion on the reflection of each project. Such reflection can be done at the end of the design process. The presentation for each design should be 5 minutes max, following the four aforementioned steps.

After all the presentations, a final discussion may take place in order to discuss both the varieties of viewpoints on the discussed perspective or worldview and the benefit of reflection-in-action as experienced through the exercise.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by making them write a self-assessment (formative assessment) focusing on describing and arguing for how they engaged in reflection-in-action on values and value stances through making as well as reviewing the value judgments made during the reflection-on-action process.

Teaching for values in design

LINKS

MATERIALS:

[Slides](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Self assessment for responsible
designers](#)

[Blogging for responsible
designers](#)

Assess students' learning by having them write a series of short blog posts (ipsative assessment) during the process: 1) Reflection-in-action notes and snapshots/sketches of the iterations, 2) Summation of central aspects reflected upon during the process connected to three keywords and with a focus on values, 3) Results of the reflection-in-action process in relation to values in design, 4) Discussion of the reflection-in-action process through critique the perspective or the worldview exemplified by the artefact in sight of the making experience as well as concluding by defending a position on the perspective or the worldview, 5) Reflection on reflection-in-action through discussing both the varieties of viewpoints on the discussed perspective or worldview and the benefit of reflection-in-action as experienced through the exercise.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- describing and visualising their reflection-in-action on values as it evolved through the iterations and during the process,
- explaining for how they engaged in reflection-in-action on values and value stances through making as well as reviewing the value judgments made during the reflection-on-action process,
- reflecting on benefits of reflection-in-action as experienced through the exercise and how reflection-in-action supports thinking about values.

REFERENCES:

Frens, Joep; and Hengeveld, Bart (2013). To make is to grasp. *In 5th International Congress of International Association of Societies of Design Research (IASDR)*, 26-30 August 2013, Tokyo.

Schön, Donald A. (1983). *The reflective practitioner: how professionals think in action*. New York: Basic Books.

Evaluating values in design with stakeholders

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Evaluation

SOLO TAXONOMY LEVEL:

Relational

...

TIME:

Medium

SUMMARY

This teaching activity supports students in evaluating (prototypes of) products, systems and services together with stakeholders. Through the activity, students argue and reason for their design as they present it to stakeholders. Together with stakeholders, students discuss, judge and evaluate values in the designed product, system or service to generate reflection on whether the students managed to embody a value-oriented attitude and approach in their design and design process.

BACKGROUND

When designing products, systems or services, it is important that students invite stakeholders to evaluate and reflect together with them about whether their designs managed to integrate and express the intended and desired values. That is, students need to engage the stakeholders as a gauge to see whether they managed to act as responsible designers and successfully consider values in design. If students do not present their designs to stakeholders they will lack validation of their value-sensitivity as well as the value-sensitivity of their designs.

Through evaluating values in design together with stakeholders, students go full circle by returning to their values, stakeholder values, the values of the design context and the values of the design project. In doing so, they reason, judge and reflect on whether values were appropriately and attentively embedded in the product, system or service.

Overall, the teaching activity provides students with arguments for the suitability and value sensitivity of their designs, allowing them to judge if there is alignment between the values identified at the beginning of the design process and the values the stakeholders experience in the product,

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system or service.

For this teaching activity, students and stakeholders meet in a workshop where the product, system or service is presented, tested and discussed in order to evaluate values in design.

LEARNING OUTCOMES

After the activity students will be able to:

- argue and reason for values in design through presenting their designs to stakeholders,
- discuss and reflect on values in design together with stakeholders,
- judge and evaluate whether values in design are sensitively and appropriately manifested in their product, system, or service and in their design process.

PREPARATIONS

- Before running this activity, students should have created a prototype of a product, system, or service targeting identified stakeholders, based on identified values that have been integrated throughout their design process.
- Invite stakeholders to the workshop at a set time and date.
- Ask students to prepare a presentation or pitch arguing and reasoning for how they have worked with integrating values throughout the design process and how values have become manifested in their product, system or service.
- Ask students to prepare a hands-on demonstration of the product, system or service focusing on highlighting values in design for stakeholders to generate discussion and reflection on whether the students were successful in acting as value-sensitive designers working with values in design.
- Ask students to decide on ways for documenting or collecting (e.g., surveys, post-its, field notes, video or audio recordings, sketches) stakeholder evaluations to be able to validate the value sensitivity of their designs.

TEACHING ACTIVITIES

STEP 1:

Before the stakeholders arrive, talk to students about the importance of keeping the focus on values in the evaluation with stakeholders. This should be the focus both in pitches and hands-on demonstration, as well as in discussion and evaluation. Highlight that the aim of the workshop is not to evaluate the product, system, service or the design process as such, but to discuss and judge the value-sensitivity.

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STEP 2:

The students run the workshop with stakeholders.

STEP 3:

After the stakeholders have left, ask students to shortly present central results, insights and reflections that came out of their workshop in relation to evaluating values in design with their stakeholders. Highlight important points and discuss with students how they can use the outcomes of the workshop to further validate their products, systems or services and themselves as value-sensitive designers.

STEP 4:

As a final step, ask students to synthesise and present the stakeholder evaluations in a way that can be shared. Ask them to focus on the value dimensions of the evaluation and how stakeholders discussed, evaluated and judged the value sensitivity during the workshop. Ask students to include a paragraph summing up the most important and critical insights coming out of the workshop as well as the implications of these in relation to acting as (more) responsible designers in the future.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes were attained by the teaching activity, the following assessment activity can be carried out (in class or after class)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to apply their knowledge to real-world examples (authentic assessment). To do this, ask them to integrate the results from the workshop by comparing their design to similar existing products, systems, or services. Students do this by relating the insights from the evaluation with stakeholders to real-world examples with similar values to reflect on how their design could function as a real-world product, system or service.

Assess students' learning by having them create a timeline of the values within the design process (ipsative assessment) focusing on how values evolved during the design process through interactions with stakeholders containing 1) values in the initial design concept, 2) values change evolving from working with values throughout the design process 3) values change evolving from presenting and discussing the design with stakeholders, and 4) the values change found in the adapted design based on the results of the workshop with stakeholders.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- presenting and synthesising the value dimensions of their design and how they have worked with values throughout the design process,

Teaching for values in design

LINKS

SUGGESTED ASSESSMENT
ACTIVITIES:

[Applying knowledge to real-world examples](#)

[Historical value timeline](#)

- arguing for the values change based on insights and results from the evaluation workshop with stakeholders,
- reflecting on the outcomes of the design process and how well they achieved to sensitively and appropriately manifest values in their product, system, or service.

Public evaluation of values in design

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Evaluation

SOLO TAXONOMY LEVEL:

Relational

...

TIME:

Medium

SUMMARY

This teaching activity supports students in presenting and explaining how values are integrated in their design to external audiences at public exhibitions or similar open events.

Through the teaching activity students summarise and argue for the values integrated in products, systems or services at a public exhibition. At the exhibition students exemplify and substantiate the way they have worked with values in design to an audience. The students then integrate the feedback and adapt their designs based on their interpretation of audience feedback to strengthen its value-sensitivity.

BACKGROUND

Often students do not have the opportunity to present their designs at open events or public exhibitions and explain or argue for their design to a wider audience. When students do not get the opportunity to receive, integrate and adapt feedback on their designs from a wider audience they might lack a broader value-check and validation of their values in design. By inviting external audiences to engage with and evaluate the values of the design, students are able to evaluate how successfully their products, systems or services embody and communicate the intended values in a meaningful and appropriate way. And, subsequently, how successfully they themselves are in acting as responsible, value-sensitive designers.

This teaching activity supports students in presenting their products, systems or services at open events or public exhibitions to external audiences. The exhibition focuses on students' explanation, exemplification and substantiation of their designs' values and value sensitivity in order for them to interpret and integrate audience feedback into their designs.

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This gives students the opportunity to adapt their designs based on the feedback they received so they become more value-sensitive before presenting them to a client or direct stakeholders.

LEARNING OUTCOMES

After this teaching activity students will be able to:

- explain, summarise and argue for the value(s) of their design to external audiences,
- exemplify how their products, systems or services are value-sensitive
- and responsible as well as substantiate – in the form of a design argument, and why this is the case,
- adapt their products, systems, and services to be more value-sensitive through interpreting and integrating feedback from the audience.

PREPARATIONS

- Before running this teaching activity, students should have created a value-sensitive product, system or services targeting a design context and/or identified stakeholders.
- Secure or organise a public space for the public exhibition at a set time and date. The space can be a venue at a public library, somewhere on campus, online, a park or other such spaces that are open and accessible to the public. The exhibition should be advertised to ensure that an audience will attend the exhibition.
- Ask students to prepare a short pitch or poster suitable for communicating to an external audience. The pitch/poster should summarise, explain and argue for how the product, system or service embodies, creates and communicates (a) specific value(s). Look for online resources to help create academic pitches/presentations or academic posters.
- Ask students to create scenarios, stories or use cases that the audience can engage with and that exemplify how their product, system or service works with values and transforms the design context for specific stakeholders in ways that are responsible and integrate values in design.
- Ask students to prepare feedback prompts that will engage the audience in discussing and critically reflecting on the value sensitivity, appropriateness and meaningfulness of their design in the design context. Underline the importance of framing the prompts in such a way that they focus the discussion on value sensitivity, responsibility and appropriateness of the design in relation to the design context and direct stakeholders.

Teaching for values in design

- Ask students to make a plan for how audience feedback will be documented and/or collected (e.g., post-its, interviews, field notes, surveys, video- or audio recordings, sketches). Students can then interpret and integrate the feedback to adapt the product, system or service to better embody, create and communicate its value-sensitivity to the client or direct stakeholders.
- Ask students to show up at the venue or exhibition space before the starting time to set up the exhibition for the audience.

TEACHING ACTIVITY

STEP 1:

Before the exhibition space is opened to the audience, meet up with all students to emphasise the importance of focusing the discussions on aspects of values in design. Also stress the importance of documenting and collecting audience feedback so that they are able to interpret and integrate it to improve the value sensitivity and responsibility of their product, system or service after the exhibition. The documentation or gathering of audience feedback can also serve as “proof of concept” in the argument for the finished product, system or service. Highlight that it can be advantageous to (also) get quite critical or contradictory feedback from the audience to create maximum improvement of the value-sensitivity, responsibility and appropriateness of product, system or service.

STEP 2:

During students' public evaluations of values in design, teachers should participate on an equal footing with the rest of the audience. You should listen to students' pitches or poster presentations that summarize and explain their work with values in design and engage in the students' exhibition and substantiation of the design in relation to design context and stakeholders. You may participate in critical discussion around the students' argument and substantiation for their value-sensitivity, responsibility and the appropriateness of the design in relation to the values of the stakeholders and design context. Focus the discussion on strong and weak points of the design argument as well as the prototype/product to help students strengthen both their thinking and design. It might also be helpful to enter into dialogue with external audiences in relation to the design to help accentuate the implications of the audience feedback and highlight consequences for the design and design argument.

STEP 3:

After the exhibition space is closed for the audience, meet up with all students to point out recurring patterns (strong and weak) in the designs and design arguments when it comes to value-sensitivity, responsible design and appropriateness in relation to the design context and stakeholders. Here, it can

LINKS

SUGGESTED ASSESSMENT
ACTIVITIES:

[Video pitching for responsible designers](#)

[Blogging for responsible designers](#)

also be made clear how students can best work to adapt their products, systems or services and strengthen their thinking to become (more) responsible and value-sensitive designers. Finally, take some time for students to share their insights and feedback and discuss implications for their future actions in the design process and future thinking as value-sensitive and responsible designers.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create a value-based video pitch (summative assessment) focusing on presenting their design to stakeholders along with their explanation, exemplification and substantiation of their design's values and value sensitivity. The video pitch should also incorporate insights and results from the public examination.

Assess students' learning by asking them to write a series of short blog posts (ipsative assessment) during the process: 1) summarising and arguing for the values of their design to external audiences, 2) exemplifying how their products, systems or services are value-sensitive and responsible, 3) documenting the public exhibition, 4) interpreting and integrating audience feedback from the public exhibition into their design and discuss whether it needs to be adapted, 5) reflecting on the received feedback and how that might help them to become more value-sensitive and responsible designers.

SUGGESTED ASSESSMENT CRITERIA:

In the assessment activity ask students to focus on

- explaining and arguing for the value(s) of their design to external audiences,
- interpreting and integrating feedback, insights and results from the public examination,
- reflecting on how the public examination highlighted values in their design and wider implications in terms of how to act and obtain an attitude as a value-sensitive and responsible designer.

Design after evaluation

SPECIFICATION

PILLAR:

Technology & Design

DESIGN PHASE:

Evaluation

SOLO TAXONOMY LEVEL:

Relational

• • •

TIME:

Medium

SUMMARY

In this teaching activity, students will learn how to plan for a continuous evaluation of a product, system or service during the evaluation phase and after it has been used for a while by different stakeholders in real life contexts. The learning from this teaching activity can for example be used for writing the “future work” section of a project report. It can also be used to plan for a future iteration of an existing product, system or service.

BACKGROUND

The teaching activity is based on the assumption that a product, system or service is never fully finished, in the sense that it needs iterative or incremental design and development after it has been appropriated into the use contexts that it was directed towards. At the end of a design process, when students are evaluating the reception and impacts of their designs in use, they can perform this activity as part of the evaluation phase.

To maintain the students’ critical perspectives on the impacts of their product, system or service, and the values that it generates in real-world/real-life contexts, students should reflect upon the results of the stakeholder evaluations of their prototypes and how they might differ from the original visions behind a design.

Additionally, students will predict a few potential impacts of their product, system or service on the contexts in which it is deployed. They will set up criteria for how they might evaluate the impacts of their product, system or service, and how different stakeholders have appropriated it to fit their user contexts.

The students will also discuss which parts of their product,

Teaching for values in design

system or service that might need to be changed or modified later on, based on the different appropriations that they might discover in the evaluation phase.

The teaching activity ends with a proposal for how the students might follow up on the development of their product, system or service after it has been used for a while. In other words: how they might assess future use patterns and their consequences.

LEARNING OUTCOMES

After the activity students will be able to:

- evaluate how different stakeholders use a product, system or service in their use contexts,
- discuss how a product, system or service might be appropriated by different stakeholders in their concrete everyday life situations, based on the above evaluation of a product, system or service,
- present suggestions for how the use of a product, system or service might be assessed when it has been used by different stakeholders for a while.

PREPARATIONS

- Introduce the students to the teaching activity during the last phase of a design process where they evaluate their prototypes.
- Prepare the provided worksheets 1–3 to be handed out to the students.
- Give instructions for the teaching activity including supporting materials such as worksheets that the students can work on independently or in groups.

TEACHING ACTIVITY

The teaching activity can be performed individually or in groups and where the teacher is available to the students during supervision.

STEP 1:

The students are asked to list three important qualities of their prototype that somehow manifest the project values. They should list their expectations of how different stakeholders might appropriate their design. See worksheet 1, column A.

STEP 2:

The students identify a list of stakeholders that they can get in touch with in order to evaluate their prototype in the actual use situations together with the stakeholders.

Teaching for values in design

STEP 3:

The students bring the prototypes to the use contexts and bodystorm (Oulasvirta, Kurvinen & Kankainen 2003), or do contextual inquiries (Beyer & Holtzblatt, 1999; Holtzblatt, Wendell & Wood, 2005) with their prototypes in the different use contexts in order to evaluate them together with a selection of stakeholders. Special attention should be paid on the expected use and perceived values that they listed in Step 1.

In a discussion with the stakeholders in the use situations, the students should keep in mind that the product, system or service might also change the stakeholders' assumptions of how they might use the product, system or service that they evaluate. Thus, a debrief with the stakeholders after the user evaluation can be appropriate.

STEP 4:

The students list the results of the evaluation of their product, system or service prototypes. By filling in column B and C in worksheet 1, they find out what the differences are between expected use and observed use.

When evaluating the results, they should discuss how their design might be redesigned, based on the insights from the evaluation by filling in column D in worksheet 1. Based on the list of insights, students create some new evaluation criteria that they might use for future investigations of the product, system or service, column E in worksheet 1.

STEP 5:

In worksheet 2, students should describe how stakeholders appropriated the prototype in a real-world scenario (column A), and then discuss what kind of impact their design might have (column B), based on this scenario.

STEP 6:

Worksheet 3 is related to future work and development, in which students should pose research questions to assess further use of their product, system or service after appropriation (column A). Based on each of the research questions, they should suggest a research method (column B), that is, how they want to investigate the research questions.

The result of the teaching activity is presented as “future work” as part of a final project presentation in plenum. Furthermore, the outcome of this teaching activity could be described in a future work section of a project report.

ASSESSMENT ACTIVITIES

To assess whether the intended learning outcomes are attained by the teaching activity the following assessment activity can be carried out (in class or after class).

Teaching for values in design

LINKS

MATERIALS:

[Worksheet 1](#)

[Worksheet 2](#)

[Worksheet 3](#)

SUGGESTED ASSESSMENT ACTIVITIES:

[Applying knowledge to real-world examples](#)

[Historical value timeline](#)

SUGGESTED ASSESSMENT ACTIVITIES:

Assess students' learning by asking them to create a timeline of the evaluation of values within the design process (ipsative assessment) focusing on how values evolve through evaluation of the design containing 1) values of the design ahead of the evaluation phase, 2) values change happening during the evaluation phase 3) values of the final design, 4) values change that (might) emerge after the design has been used for a while.

Assess students' learning by asking them to engage in peer feedback (authentic assessment) on each other's design after design. Ask students to comment and pose questions in relation to the proposed changes and modifications and how well they are connected to findings coming out of the evaluation phase. Also ask students to give critical but constructive feedback on the suggestions for how the use of a product, system or service might be assessed when it has been used by different stakeholders for a while.

SUGGESTED ASSESSMENT CRITERIA: |

In the assessment activity ask students to focus on

- explaining how they have planned for continuous evaluation of their product, system or service during and after it has been put into use,
- describing how they might evaluate the impact of their product, system or service, and how different stakeholders have appropriated it to fit their user contexts,
- reflecting on how they might follow up on the development of their product, system or service after it has been used for a while and assess future use patterns and their consequences.

REFERENCES

Beyer, Hugh; and Holtzblatt, Karen (1999). *Contextual Design. Interactions*, 6(1), 32–42.

Holtzblatt, Karen; Wendell, Jessamyn Burns; and Wood, Shelly (2005). *Rapid Contextual Design: A How-to Guide to Key Techniques for User-Centered Design*. San Francisco: Morgan Kaufmann.

Oulasvirta, Antti, Kurvinen, Esko; and Kankainen, Tomi (2003). Understanding contexts by being there: case studies in bodystorming. *Personal and Ubiquitous Computing*, 7, 125–134.

THE COLLECTION OF ASSESSMENT ACTIVITIES

The collection of 12 assessment activities provides summative, formative, ipsative and authentic assessment types divided into the competency types: Knowledge, Skills and Attitudes.

The descriptions of the assessment activities provide the background and rationale behind each of the activities. They also provide an overview of materials, tools, texts, and other resources needed to run the activity, and offer links to digital resources that can be accessed on the digital version of the educational resource.

Mind mapping for responsible design

SPECIFICATION

ASSESSMENT TYPE:
Summative

LEARNING OUTCOME:
Knowledge

SUMMARY

Mind mapping for responsible design is a visual and summative method aimed at assessing the students' acquired knowledge through the making of a mind map. The method allows students to interpret and combine topics in their own way by making connections between knowledge and ideas.

BACKGROUND

Mind mapping for responsible design is a summative method for assessing the knowledge students have acquired through a teaching activity. The activity allows the student to show their ability to make connections between the topics related to values in design.

Mind maps can be described as a graphical method of representing a topic ((O'Connor, 2011). The visual structure helps the user represent concepts and ideas with images, colours and symbols if they so wish. A typical mind map might have a central idea and a hierarchical or tree branch format, with ideas branching into their subsections. Although, in practice, there is no compulsory structure.

By asking the students to create a mind map the teacher is able to see whether the intended learning outcomes of the teaching activity have been achieved by asking students to map their knowledge about responsible design based on the suggested assessment criteria listed in the teaching activity.

By asking students to produce mind maps on the basis of specified assessment criteria, the teacher may assess students' acquired vocabulary and knowledge in relation to becoming a responsible designer with knowledge about e.g. ethics and values in design of products, systems or services.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to create mind maps demonstrating their acquired knowledge about becoming a responsible designer. The mind map should address the specified assessment criteria.

Instructions to students:

STEP 1:

Use post-its (or similar) to note down different technologies, words, concepts, responses, reflections or implications of values in design.

STEP 2:

Draw connections between the different post-its and describe the connections.

STEP 3:

Demonstrate your knowledge by elaborating on the mapped technologies, words, concepts, responses, reflections or implications of values in design on the post-its and the described connections in ways that specifically address the listed assessment criteria.

The following steps are optional:

STEP 4:

Share your mind map with other students.

STEP 5:

Browse through the other students' mind maps to deepen and broaden your own knowledge (and revise your mind map if necessary).

ASSESSING THE STUDENTS' LEARNING

When assessing the activity, it is important to focus on the knowledge content of students' mind maps to capture and address the "visible signs of learning". When doing a summative assessment the focus is on whether the students are able to sum up their knowledge, relative to the intended learning outcome and relevant assessment criteria. Summative assessment provides the teacher with information on the depth, breadth and recurring patterns related to the student's learning. That is, if the students are able to demonstrate and make visible the new knowledge that they have acquired through the teaching activity.

When assessing the students' mind maps, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent do the students meet the assessment criteria listed in the teaching activity?
- How deep and broad are the students' knowledge when it

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Introduction to ethics in design](#)

[Introduction to values in
design](#)

[Design with and for certain
philosophies](#)

[Values clustering for
developing students' value
vocabularies](#)

[Understanding value tensions](#)

comes to mapping knowledge about values in design?

- Are there apparent knowledge gaps in the students' mind maps?
- Are there obvious connections in the mind map that students did not make, or connections that are particularly strong/weak?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary mind maps that work particularly well in addressing learning goals and assessment criteria (consider highlighting these for students to see)?

Reflective values report

SPECIFICATION

ASSESSMENT TYPE:

Formative

LEARNING OUTCOME:

Knowledge

SUMMARY

A reflective report is a formative assessment method which can be applied for assessing the student's understanding of the importance of addressing values in design. The students' acquired knowledge is assessed by asking them to write about how values are manifested in products, systems and services, and where these values come from.

BACKGROUND

A reflective report is a formative method for assessing the knowledge the students have acquired through the teaching activity. A reflective report takes into account the context in which events occur, questions assumptions, considers alternatives, thinks about consequences of decisions/actions on others, and engages in reflective skepticism Hatton and Smith (1995). This activity allows the students to demonstrate their acquired knowledge by identifying and describing the values that their designs (or others' designs) could manifest, and critically reflecting on where these values come from.

This assessment activity allows the teacher to see whether the expected learning outcomes of the teaching activity have been achieved. The reflective report also allows the teacher to assess the students' acquired vocabulary and knowledge in relation to values in design, for example, ethics, value systems or products, systems or services.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to write a reflective report demonstrating their acquired knowledge about the teaching activity. The report should target the specified assessment criteria.

Teaching for values in design

Instructions to students;

STEP 1:

Write a reflective report about how values are manifested in your (or others') design and where these values come from. Address the following questions:

- What values are manifested in your work (or in the work of others)?
- What significance or meaning do the values represent in your work (or in the work of others)?
- Where do these values come from?
- What did you learn about values in design as a result of the teaching activity?

STEP 2:

Next, address how you will apply this knowledge to future design activities in your upcoming professional and academic life. Address the following questions:

- What is the gap between the identified values and your own personal values?
- What methods or strategies did you fail to implement in order to be aware about values?
- How would you change your approach of being value-oriented in the future?
- What are the key steps for intentionally designing with values in mind?

The following steps are optional:

STEP 3:

Share the reflective report with the other students.

STEP 4:

Read the other students' reflective reports to deepen and broaden your own knowledge and report (and revise your report if necessary).

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' abilities to explain and address their reflections on the knowledge acquisition about values in design. When doing a formative assessment, the focus is on whether the students are able to explain and elaborate on their acquired knowledge in relation to the intended learning outcomes and relevant assessment criteria. Formative assessment provides the teacher with information on the students' abilities to elaborate and reflect upon new knowledge that they have acquired through the teaching activity and how they will make use of it in future learning situations.

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Manifestos on values and ethics](#)

[Understanding values changing over time](#)

[Individual designer's values identification and hierarchy](#)

[Mapping value landscapes](#)

[Understanding value tensions](#)

When reviewing the students' reflective report, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent do the students meet the assessment criteria listed in the teaching activity?
- Can they name any methods or strategies for addressing values in design and when designing?
- Can they explain the significance or meaning of values represented in their work?
- How deep and broad are the students' knowledge when it comes to identifying values manifested in a product, system or service?
- Are there apparent knowledge gaps between the identified values and their own design activities?
- Can they identify the important aspects related to implementing values in designs?
- Can they explain the significance or meaning of values represented in their work (or the work of others)?
- Can the student relate their own values, worldview and vision on values in design up against existing theoretical frameworks?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary reflective reports that work particularly well in addressing the intended learning outcomes and assessment criteria (consider sharing these with the students)?

REFERENCES

Hatton, Neville, & Smith, David (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*, 11 (1), 33-49.

Personal values-reflection video

SPECIFICATION

ASSESSMENT TYPE:

Ipsative

LEARNING OUTCOME:

Knowledge

SUMMARY

Recording a personal video is an ipsative assessment method that captures the student's knowledge development. The personal video focuses on the students' reflection on what it entails to be a responsible designer and how their knowledge has changed.

BACKGROUND

Recording a personal video supports the students in identifying their knowledge acquisition through an ipsative approach, that is, to see and acknowledge their own learning progress. Students often tend to view learning as distinctly linear: event A happened, then event B, then event C, which makes it challenging for students to identify and self-assess their learning progress.

By asking students to produce a personal video on values in design on the basis of specified assessment criteria, the teacher can assess students' acquired knowledge in relation to the value dimension of design. Using personal videos as an ipsative assessment method creates longitudinal and cumulative dialogues based on actual knowledge learnt through self-judgement.

ASSESSMENT ACTIVITY

Ask the students to create personal videos demonstrating their knowledge about values in design. The personal videos should target the specified assessment criteria.

Instructions to the students:

STEP 1:

Create a short and personal video at the beginning of the teaching activity(or the course, semester, or lesson) where you talk about the following questions:

Teaching for values in design

- What is your current understanding about the topic of this teaching activity? (or the course semester, or lesson).

STEP 2:

Create at least one other personal video about your current understanding about the topic of the teaching activity (or the course semester, or lesson).

STEP 3:

Watch the videos (at least two) that you have created. Make one more video where you answer the following questions:

- What have you learned about values in design?
- What are the key concepts?
- In what ways have these learning experiences gained changed your views on values in design?
- Have you changed your approach to how to work with values in design based on your new knowledge?
- In what ways have you changed methods or strategies in order to design with values in mind?

Compare the first and the second personal video to identify what you have learned, and the knowledge acquired.

The following steps, are optional:

STEP 4:

Upload and share your personal videos with the other students.

STEP 5:

Watch the other students' personal videos to deepen and broaden your own knowledge (and revise your own videos if necessary).

ASSESSING THE STUDENTS' LEARNING

When assessing the activity, it is important to focus on the aspects of knowledge in the students' personal videos on values to capture and address the "visible signs of learning". When doing an ipsative assessment the focus is on whether the students are able to explain, identify important knowledge acquired over time in relation to the intended learning outcomes and the relevant assessment criteria. Also, the focus is on how any change within the students' existing knowledge has led to new perspectives and understandings. An Ipsative assessment thus provides the teacher with information on the depth, breadth and recurring patterns related to the progress of students' learning. That is, in what ways are the students able to elaborate on the new knowledge that they have acquired over time?

When reviewing the students' personal video on values, it might be helpful to pay attention to the following optional

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Manifestos on values and ethics](#)

[Understanding values changing over time](#)

[Individual designer's values identification and hierarchy](#)

[Mapping value landscapes](#)

[Understanding value tensions](#)

proposals for focus points depending on the content of the related teaching activity:

- To what extent do the students meet the assessment criteria listed in the teaching activity?
- How deep and broad are the students' knowledge when it comes to talking about values in design?
- Are there apparent knowledge gaps in the students' personal video on values?
- Are there obvious reflections or development in their knowledge acquisition that students did not make, or reflections that are particularly strong/weak?
- Has the students' ongoing acquisition of knowledge made any changes or new perspectives within their existing understanding of values in design?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary personal videos on values that work particularly well in addressing learning goals and assessment criteria (consider sharing these with the students)?

Applying knowledge to real-world examples

SPECIFICATION

ASSESSMENT TYPE:

Authentic

LEARNING OUTCOME:

Knowledge

SUMMARY

Applying knowledge to real-world examples is an authentic assessment method for assessing the student's thoughts, knowledge and ideas on identifying values in design (their own or others'). The students' learning is assessed by applying their knowledge on values in design on real-world examples. The assessment activity allows students to elaborate on the identified values in design in relation to their own personal values, worldviews and visions on values in design.

BACKGROUND

Applying knowledge to real-world examples is an authentic assessment method aimed at assessing the knowledge the students have acquired. The activity allows the students to, in an authentic way, apply their knowledge specific to values in design by finding examples of products, systems or services and identifying the underlying values.

This assessment activity allows the teachers to see whether the intended learning outcomes of the teaching activity have been achieved, by asking students to apply their knowledge about values to real-world examples based on the suggested assessment criteria listed in the teaching activity.

The assessment activity allows the teacher to assess students' acquired vocabulary and knowledge in relation to values in design, such as ethics, value systems, or products, systems or services, etc.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to apply their knowledge about values in design by identifying values in real-world examples of products, systems and services.

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Value manifested in products,
systems and services](#)

[Identifying and resolving value
tensions](#)

[Evaluating values in design
with stakeholders](#)

Instructions to the students:

STEP 1:

Select three examples of products, systems or services used in everyday life.

STEP 2:

Identify the underlying values in the three examples and note down words, concepts, responses, reflections or implications of values.

STEP 3:

Elaborate on your own personal values, worldview and vision of values in design and relate to the values in the three examples.

The following steps are optional:

STEP 4:

Share your real-world examples and your notes with the other students.

STEP 5:

Look at the other students' real-world examples to deepen and broaden your knowledge (and revise your real-world examples if necessary).

ASSESSING THE STUDENTS' LEARNING

When doing an authentic assessment, it is important to focus on how the students apply their knowledge about values in design by relating to real-world examples. That is, if the students are able to translate and reflect upon the new knowledge that they have acquired through the teaching activity into real-life practice?

When reviewing the students' identification of values in real-world examples, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent do the students meet the assessment criteria listed in the teaching activity?
- How deep and broad are the students' knowledge when it comes to identifying values in real-world examples?
- Are there apparent knowledge gaps in the students' analyses of real-world examples?

For further professional development consider:

- What are the specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary real-world examples that work particularly well in addressing the intended learning outcomes and assessment criterias (consider sharing these with the students)?

Video pitching for responsible designers

SPECIFICATION

ASSESSMENT TYPE:
Summative

LEARNING OUTCOME:
Skills

SUMMARY

Video pitching for responsible designers is a summative method aimed at assessing the student's acquired skills related to creating value-based designs. In this summative assessment activity, students prepare a short video pitch highlighting acquired skills in relation to values in design such as e.g., value tensions in their design, identified harms or benefits, stakeholder analysis, etc. The purpose of the activity is thus to assess the students' ability to describe their acquired skills in the form of a video pitch.

BACKGROUND

Video pitching for responsible designers is a summative assessment method for assessing the skills the students have acquired through the teaching activity in order to become a responsible designer. The activity allows the students to elaborate about how their skills have made it possible to specifically create value-based designs, embed values, or take stakeholder values into consideration, etc.

This assessment activity allows the teacher to see whether the intended learning outcomes of the teaching activity have been achieved by asking the students to create a video pitch about their acquired skills as responsible designers on how to design with values in mind based on the suggested assessment criteria listed in the teaching activity.

By asking students to produce a video pitch on the basis of the specified assessment criteria, the teacher can assess students' acquired skills in relation to values in design such as e.g. value tensions in their design, identified harms or benefits, stakeholder analysis, etc.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to create a video pitch demonstrating their skills as responsible designers. Ask students to focus the video pitch by addressing the specified assessment criteria.

Instructions to students:

(add specific questions to Step 1 related to the assessment criteria listed in the teaching activity).

STEP 1:

Create a video pitch where it might be helpful to pay attention to the following optional question depending on the content of the related teaching activity:

- What is your value-based stance when working as a designer?
- How do/did you create a value-based design?
- How do/did you embed values in design?
- How do/did you work with values in relation to stakeholders?
- How do/did you become aware of value tensions in the design?
- What are the identified harms/benefits in your design?

The following steps are optional:

STEP 2:

Upload and share the video pitch with the other students.

STEP 3:

Watch the other students' video pitches to deepen and broaden your knowledge.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' skills to capture and address the "visible signs of learning". When doing a summative assessment, the focus is on whether the students are able to sum up their achieved skills, in relation to the intended learning goals and relevant assessment criteria. Summative assessment provides the teacher with information on the depth, breadth and recurring patterns related to the students' learning. That is, are the students able to demonstrate and make visible the new skills that they have acquired through the teaching activity.

When reviewing and watching the students' video pitch, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Values manifested in products,
systems and services](#)

[Project values identification](#)

[Visualising values in design
with mood boards](#)

[Evaluating values in design
with stakeholders](#)

- To what extent did the students meet the assessment criteria listed in the teaching activity?
- How deep and broad are the students' description about necessary skills when working with values in design?
- Are there obvious skills students did not talk about, or skills that are particularly strong/weak described
- For further professional development consider:
- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary video pitches that work particularly well in addressing learning goals and assessment criteria?

Round Robin Values Brainwriting

SPECIFICATION

ASSESSMENT TYPE:

Formative

LEARNING OUTCOME:

Skills

SUMMARY

Round Robin Brainwriting is a formative assessment method that builds on consecutive contributions by each student about a specific question related to values in design. The assessment activity involves passing answers/reflection among students in class (or in groups) to assess the understanding of acquired skills related to e.g., creating value-based design, embedding values, or creating value for stakeholders. In a group of 4 or 5 people, each student writes down answers to an open-ended question given by the teacher on a value-related phenomenon.

BACKGROUND

The Round Robin Brainwriting assessment activity generates and develops formative reflection through brainstorming by focusing on a central question, issue or theme related to the assessment criteria from the teaching activity. The activity thus assesses the students' acquired skills through formative reflection and critical thinking.

The assessment activity builds on the consecutive contributions of each student and helps the students to know, respect and value their group members' experiences. Round Robin Brainwriting has the distinct advantage of encouraging contributions from all participants, including those who typically remain silent. The activity involves all students by giving them a voice and a space to present their ideas without undue influences from the other students in class. That way the teacher gets valuable insight about all students' progress.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students divided in groups of 4-5 people to run a Round Robin Brainwriting session to demonstrate their skills about values in design.

Teaching for values in design

The basic structure of a Round Robin Brainwriting session begins with a central theme, an open-ended question, or an issue provided by the teacher. Ask the students to focus the Round Robin Brainwriting on targeting the specific theme, question or issue. This could for example, be a question related to the assessment criteria in the teaching activity addressing the role of values in design, ethical implications, students' value vocabularies, stakeholders' values, etc.

Instructions to students:

STEP 1:

Write down an answer to/reflection on the theme, open-ended question or issue provided by the teacher in a shared document (all students write their names on the top of the shared document so it's possible to identify the group members).

STEP 2:

Read through the other group members' answers.

STEP 3:

Add an additional point, idea, or thought to all of the group members' answers/reflections – ideally one which has not yet been mentioned.

STEP 4:

Repeat step 2 and 3 until all group members have 4-5 responses and have received an addition to their original answers/reflections.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' ability to explain and address their reflections when conducting value-based design. When doing a formative assessment, the focus is on whether the students are able to explain and elaborate on their achieved skills, relative to the learning goals and relevant assessment criteria. Formative assessment provides the teacher with information on the students' abilities to elaborate and reflect upon new skills that they have acquired through the teaching activity and how they will make use of it in future learning situations.

When reviewing the students' Round Robin Brainstorming results about values in design, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students meet the assessment criteria listed in the teaching activity?
- How deep and broad are the students' answers to the preliminary question about values handled in an activity?
- How deep and broad are the students' additional answers to the preliminary question about values?

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Introduction to values in design](#)

[Introduction to cultures and values in design](#)

[Value clustering for developing students' value vocabularies](#)

[Stakeholder values elicitation](#)

[The game changer](#)

- Are there obvious answers or reflections in the Round Robin brainstorm that students are missing, or answers or reflections that are particularly strong/weak?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary Round Robin Brainstorm results that work particularly well in addressing learning goals and assessment criteria (consider comparing between student groups)?

Historical value timeline

SPECIFICATION

ASSESSMENT TYPE:

Ipsative

LEARNING OUTCOME:

Skills

SUMMARY

Writing a historical timeline is an ipsative assessment of students' progress in acquiring specific skills in designing with values. The historical timeline demonstrates the lifecycle of values in the design process, where the students reflect about values within the design process, by addressing the consequences, emergence, and disappearance of values.

BACKGROUND

Students often view learning as distinctly linear: event A happened, then event B, then event C. This makes it challenging for students to identify and self-assess their progress. Writing a historical timeline of the values within the design process capitalizes on this tendency, but then forces students to take a step back and take a helicopter perspective to identify relationships between learning experiences using an ipsative approach.

Based on the suggested assessment criteria listed in the teaching activity, this assessment activity encourages students, in an ipsative way, to reflect upon their own design projects and think about whether they should make changes in order to adapt to changing conditions over time within a product, system or service.

By asking students to write historical timelines of the values within the design process on the basis of specified assessment criteria, the teacher can assess students' acquired skill in relation to the value dimension of design such as value tensions in their design, identified harms/benefits, stakeholder analysis, etc.

ASSESSMENT ACTIVITY

During the teaching activity, the students map out their work

Teaching for values in design

with values to create historical timelines of the values within the design process in order to demonstrate their skills about working with values in design. At the end of the activity (or course, or semester) the students are asked to create an argumentation for their designerly choices focusing on values in design and the specified assessment criteria.

Instructions to students:

STEP 1:

Create a timeline in a text document covering the entire teaching activity, (or course, or semester).

STEP 2:

During the activity, add all value related observations, reflections, thoughts, etc. and when they occur to the correct timestamp on the historical timeline. This could for example be consequences, emergence and disappearance of a value in the design process.

STEP 3:

At the end of the teaching activity (or course, or semester), conduct an analysis where you compare the different time periods you have carried out in your process. Pay attention to whether there has been any change and/or continuity over time related to working with values

STEP 4:

Below the timeline, write arguments that connect the identified changes and/or continuity related to values with skills necessary to embed values in design. This could for example be an argument about why certain activities or initiatives in the design process supported the ability to embed values in design.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' skills to capture and address the "visible signs of learning". When doing an ipsative assessment the focus is on whether the students are able to explain, identify or realise important experiences that over time created progress in the learning situation relative to the intended learning goals and assessment criteria. An Ipsative assessment thus provides the teacher with information on the depth, breadth and recurring patterns related to the progress of students' learning. That is, in what ways the students are able to make visible the new skills that they have acquired over time.

When reviewing the students' historical timelines of values within the design process, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students meet the assessment criteria listed in the teaching activity?

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Project values identification](#)

[Evaluating values in design
with stakeholders](#)

[Design after evaluation of
prototype](#)

- Can the student identify progress as well as a lack of progress?
- How deep and broad are the students' historical timelines when it comes to providing information about their skills and abilities to reflect upon values?
- Are there obvious connections in the historical timeline about any change and/or continuity over time related to working with values that students did not make, or connections that are particularly strong/weak?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary historical timelines that work particularly well in addressing learning goals and assessment criteria (consider sharing these with the students)?

Peer feedback for responsible designers

SPECIFICATION

ASSESSMENT TYPE:

Authentic

LEARNING OUTCOME:

Skills

SUMMARY

Peer feedback for responsible designers is an authentic assessment method that offers a structured learning process for students to critique and provide feedback on each other's work as responsible designers.

BACKGROUND

Peer feedback for responsible designers is an authentic assessment method that encourages the students to actively engage with the results of a teaching activity. As an authentic assessment method, it resembles the critiquing and feedback professional designers use to self-assess and improve their own work.

By giving peer feedback in review rounds the students' deep learning to become responsible designers, is supported. Based on the assessment criteria listed in the teaching activity, the students share their reflections so that new meanings and understandings appear. When the students reflect upon each other's work and decide what constitutes "good work" as a responsible designer, they also apply their own acquired skills.

This assessment activity thus allows the teacher to see whether the intended learning outcomes of the teaching activity have been achieved by asking the students to give peer feedback based on the suggested assessment criteria listed in the teaching activity.

By asking students to give peer feedback on the basis of the specified assessment criteria, the teacher can assess students' acquired skills in relation to values in design, such as, value tensions in their design, identified harms and benefits, stakeholder analysis, etc.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to provide feedback on their peers' work by using the specified assessment criteria.

Instructions to students:

STEP 1:

Upload and share your work, that is, the outcome of the teaching activity that is to be reviewed by your peers.

STEP 2:

Read through and analyse the shared work, and specifically the work that you are assigned to peer review.

STEP 3:

Review the work based on the assessment criteria provided by the teacher. The review builds on your own reflections and thoughts from what you have learned from the teaching activity. The peer review could be documented in text, as a video, or any other relevant format.

STEP 4:

Return to your own work and the feedback given by your peers, to deepen and broaden your knowledge. If necessary, revise the peer-reviewed material, that is, the outcome of the teaching activity.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' abilities to capture and address the "visible signs of learning" to become a responsible designer. When doing an authentic assessment, the focus is on whether the students are able to reflect upon their learning through an authentic dialogue in relation to the intended learning outcomes and assessment criteria. Authentic assessment provides the teacher with information on the depth and breadth related to the students' abilities to unfold, put in perspective, and visualize their learning in an authentic context or authentic community. That is, are the students able to demonstrate and make visible the new skills that they have acquired through the teaching activity.

When reviewing the students' peer feedback, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students' own work meet the assessment criteria listed in the teaching activity?
- To what extent did the students' peer feedback on each other's work meet the assessment criteria listed in the teaching activity?

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Design team's value statement
manifesto](#)

[Listing stakeholders and their
values](#)

[Stakeholders value elicitation](#)

[Mapping value landscapes](#)

[Constructing value-based
design requirements](#)

[Identifying and resolving value
tensions](#)

[Exploring values through
extreme worlds](#)

[Design after evaluation of
prototype](#)

- To what extent were the students able to have a dialogue about values, and values in design, when providing the peer feedback?

For further professional development consider:

- Are there any specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary peer feedback that work particularly well in addressing the learning outcomes and assessment criteria (consider sharing these with the students)?

Case-based assessment for responsible designers

SPECIFICATION

ASSESSMENT TYPE:

Summative

LEARNING OUTCOME:

Attitude

SUMMARY

Assessing students' learning through an analysis of a case provided by the teacher is a summative method. The students are assessed by asking them to apply their acquired skills on a case by imagining and analysing potential consequences of a design.

BACKGROUND

Case-based assessment is a summative method for assessing the students' attitude in relation to either their understanding of a specific theory applied to a (new) case, or how they would react in a certain situation. The choice of case could either be a re-run of some elements of the teaching activity or as a new standalone case.

Instead of assessing through e.g., memorization, the students are asked to apply their acquired knowledge on a case. Case-based assessment thus reduces the possibility of the students simply remembering a key phrase.

Based on a case presented as text, video, image or audio, the students work with the case provided by the teacher through the use of various media (e.g., text, visuals, video). An example of such a case can be an existing design, a situation, a scenario or it can be an example that has been presented in the teaching activity. The case can be picked by students or by the teacher, and the students can all look at the same case or a different one

In this activity, the students work with a case through imagining and analysing potential widespread consequences, long-term effects and societal impacts of designs.

ASSESSMENT ACTIVITY

After the teaching activity, ask the students to analyse a case (either as a re-run of some elements of the teaching activity or as a new standalone case), to demonstrate their attitudes by the way they approach or analyse the case. Ask the students to focus the analysis of the case by targeting the specified assessment criteria listed in the teaching activity.

Instructions to students:

STEP 1:

Get an overview of what the case is about.

STEP 2:

Analyse the case through the following criteria with a focus on values:

- organisation of arguments,
- feasibility of solutions presented,
- consequences, long-term effects and societal impacts of the design.

The following steps are optional:

STEP 3:

Share the analysis of the case with the other students.

STEP 4:

Review the other students' analyses to deepen and broaden your own reflections.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' attitudes in order to capture and address the "visible signs of learning". When doing a summative assessment, the focus is on whether the students are able to sum up and address intended learning outcomes relative to the assessment criteria. Summative assessment provides the teacher with information on the depth and breadth related to the student's learning. That is, are the students able to demonstrate and make visible what they have learned through the teaching activity?

When reviewing the students' case analysis, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students meet the assessment criteria listed in the teaching activity?
- How broad and deep are the students' analyses of the potential consequences of a design using relevant envisioning criteria (including values) (e.g., in regards to re-

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Introduction to ethics in design](#)

[Introduction to cultures and
values in design](#)

[Understanding values
changing over time](#)

[Envisioning future scenarios](#)

design, further stakeholder dialogue, possible tensions)?

- Are there obvious skills students did not talk about, or skills that are particularly strong/weak described?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary case analyses that work particularly well in addressing the intended learning outcomes and assessment criteria (consider sharing these with the students)?

Self assessment for responsible designers

SPECIFICATION

ASSESSMENT TYPE:

Formative

LEARNING OUTCOME:

Attitude

SUMMARY

Self assessment is a formative assessment method that increases the students' awareness of how values are handled in an activity or a design process. The aim is to create conditions for students' critical analyses through a formative self assessment process and to improve their confidence and proficiency in working with values in design. When performing a self assessment, the students make their acquired knowledge explicit, clear and visible.

BACKGROUND

Self assessment is a formative assessment method that enables reflection, which supports critical thinking and higher order learning. Self-assessment is defined as the process by which students make judgments about their learning, particularly their learning outcomes (Boud & Falchikov, 1989). When students conduct a self assessment and afterwards review each other's self assessments, they assess their learning through a dialogue focusing on how to handle values in the design process.

This assessment activity allows the teacher to see whether the intended learning outcomes of the teaching activity have been achieved by asking students to carry out a self assessment with a focus on how values are acted upon in an activity based on the suggested assessment criteria listed in the teaching activity.

By asking students to carry out a self assessment based on specified assessment criteria, the teacher can assess students' acquired attitudes in relation to how they have handled values in an activity, what methods or strategies they used, and how they would change their approach in a future learning activity.

ASSESSMENT ACTIVITY

After the teaching activity, ask students to demonstrate their acquired knowledge about values in design by carrying out a self assessment with a focus on how values are dealt with in their work.

Instructions to students:

STEP 1:

Based on the outcome of the teaching activity, carry out a self assessment in written form on how you have handled values in your work. You may focus on:

- What else could you have done to handle values in an activity?
- What is the gap between the values that the design was planned to build on and how you handled them?
- What methods or strategies did you fail to implement when handling values in design?
- How would you change your approach of being value-oriented in the future when handling values in a design activity?
- What are the approaches required to handling values in a design activity?

STEP 2:

Share your self assessment with the other students. You will also receive another student's self assessment to review.

STEP 3:

Evaluate, through a peer review, the self assessment you have received. Focus your review by asking the following deepening questions:

- Can you come up with any alternative to the proposed method about how to handle values in an activity?
- Are the suggested approaches of how to be value-oriented when handling values in a design activity aligned with your understanding and interpretation of the topic?
- Are the suggested approaches aligned with your understanding of how to handle values in a design activity?

STEP 4:

Based on the peer review (received and given) formulate a conclusion for how to deal with values during an activity in forthcoming design activities and learning activities.

The following steps are optional:

Step 5:

Share the conclusions with the rest of the students.

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Design team's value
identification and hierarchy](#)

[Value-based reformulation of
the design draft](#)

[Constructing value-based
design requirements](#)

[Exploring values through
extreme worlds](#)

[Re-designing concepts for
different cultures](#)

[Contextualising values through
reflection-in-action](#)

STEP 6:

Read the other students' conclusions to deepen and broaden your own reflection (and revise your self assessment if necessary).

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' attitudes in order to capture and address the "visible signs of learning". When doing an authentic assessment, it is important to focus on how the students through an external community of practice can apply or integrate their knowledge relative to the learning goals and relevant assessment criteria. That is, in what ways the students are able to translate and reflect upon new knowledge that they have acquired through the teaching activity up against a community of practice.

When reviewing and watching the students' self assessments, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students meet the assessment criteria listed in the teaching activity?
- How broad and deep are the students' reflections about their own awareness of how values are handled in an activity or a design process?
- Can the students respond to the feedback from the other students and relate it to their design process?
- Are there obvious elements that the students did not address in their self-assessment? (maybe elements that are particularly strong/weak?)

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary self assessments, peer reviews, or conclusions that work particularly well in addressing the intended learning outcomes and assessment criteria (consider sharing these with the other students)?

REFERENCES

Boud, David, & Falchikov, Nancy (1989). Quantitative studies of student self-assessment in higher education: a critical analysis of findings. *Higher Education*, 18(5), 529–549.

Blogging for responsible designers

SPECIFICATION

ASSESSMENT TYPE:

Ipsative

LEARNING OUTCOME:

Attitude

SUMMARY

Blogging for responsible designers is an ipsative assessment method that increases the students' awareness of how values affect design and design processes, and improves their confidence and proficiency in working with values in design. The aim is to develop students' critical analysis through multiple resources. Via a series of blog posts, the students can share ideas and make their learning explicit, and visible to a community of practice, and thereby stimulate peer-learning.

BACKGROUND

Blogging for responsible designers as an ipsative assessment method enables reflection through communicating with others and supports the students in collaboratively constructing knowledge. A blog (abbreviated from "web log") is a website where people publish short items on a continuing basis. A blog can have one author or many. Blog entries (posts) display in reverse chronological order (that is, the most recent post displays highest on the page). Authors can embed hyperlinks, images, videos and podcasts in the content of the post, and can leave a section at the bottom of each post open for readers' comments (UNSW, accessed 12 May 2021).

By writing and assessing blog posts the students develop higher order learning in which the students can manage their own learning process.

Through the ipsative assessment, the acquired attitudes are thus made explicit, and visible to the students, which both increases the students interest and ownership in learning and provides opportunities for diverse perspectives.

This assessment activity allows for the teacher to see whether the intended learning outcomes of the teaching activity have been achieved by asking the students to write a series of blog

Teaching for values in design

posts based on the suggested assessment criteria listed in the teaching activity.

By asking students to write blog posts on the basis of specified assessment criteria, the teacher can assess students' acquired attitudes in relation to values in design such as tensions in their design, identified harms and benefits, etc.

ASSESSMENT ACTIVITY

Parallel to the on-going teaching activity, ask the students to set up a blog and write blog posts demonstrating their attitudes about values in design. Ask students to focus their blog posts on targeting the specified assessment criteria.

Instructions to students:

STEP 1:

Create a series of blog posts during the course (or semester, or lessons) containing your thoughts and reflection about topics related to values in design.

STEP 2:

Your blog should be a sort of a reflective journal where you focus on exploring your learning experience and process. When writing, consider the themes introduced in the teaching activity.

STEP 3:

You may include hyperlinks, images, videos and podcasts in the blog posts. You may also give the reader the option to comment on the blog posts.

STEP 4:

To encourage questions from your blog's reader, pose questions that act as a catalyst for reflection.

The following steps are optional:

STEP 5:

Read the other students' blogs and provide comments.

STEP 6:

Return to your blog and read through all the comments provided by others, to deepen and broaden your knowledge.

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' attitudes in order to capture and address the "visible signs of learning". When doing an ipsative assessment the focus is on whether the students are able to explain, identify or realise important learning experiences that over time created progress in the learning in relation to the intended learning outcomes and relevant assessment criteria. An ipsative assessment provides the teacher with information on the depth, breadth and recurring patterns related to the progress of student's learning. That is, are the students able to

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Design team's value
statements manifesto](#)

[Contextualising values through
reflection-in-action](#)

[Public evaluation of values in
design](#)

make visible the attitudes that they have acquired over time.

When reviewing the students' blog posts, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- To what extent did the students meet the assessment criteria listed in the teaching activity?
- Are there obvious elements related to obtaining an attitude that the students did not talk about, or elements that are described particularly strong/weak?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary blogs that work particularly well in addressing the intended learning outcomes and assessment criteria (consider sharing these with the students)?

REFERENCES

UNSW Sydney (2021) Assessing with Blogs. Retrieved 2021-05-21 from <https://teaching.unsw.edu.au/assessing-blogs>

Values exhibition or public workshop

SPECIFICATION

ASSESSMENT TYPE:

Authentic

LEARNING OUTCOME:

Attitude

SUMMARY

Creating a value exhibition or a public workshop is an authentic assessment method that increases the students' awareness of how values affect the design and design process and improves their confidence and proficiency in working with values in design. The aim is to develop students' critical analyses through a dialogue with external audiences or possible stakeholders to enhance their transferable skills and attitudes. At an exhibition or a public workshop, the students can share ideas and make their acquired knowledge explicit and visible to a community of practice. The assessment will include more voices and build a greater capacity for student learning.

BACKGROUND

Exhibitions are public demonstrations of mastery that occur at culminating moments, such as at the conclusion of a unit of study, the transition from one level of schooling to the next, and graduation. Exhibitions require students to speak publicly, use evidence, present engaging visual displays, and otherwise demonstrate mastery to educators, peers, and others from outside the everyday school community (Davidsson, 2009). Creating a value exhibition or a public workshop is an authentic assessment method that enables reflection through dialogue with external audiences or stakeholders, which supports the students in constructing knowledge and reflection collaboratively. Through the activity the students develop critical thinking and higher order learning through an understanding of values in design in relation to stakeholders or external audiences. If students do not present their designs to stakeholders or external audiences, they might lack a validation of their designs' value sensitivity.

This assessment activity allows the teacher to see whether

Teaching for values in design

the intended learning outcomes of the teaching activity have been achieved by asking students to create a value exhibition or public workshop based on the suggested assessment criteria listed in the teaching activity.

By asking students to organise a value exhibition or a public workshop on the basis of specified assessment criteria, the teacher can assess students' acquired attitudes in relation to the value dimension of design such as; value tensions in their design, identified harms or benefits, stakeholder analysis, etc.

ASSESSMENT ACTIVITY

After the teaching activity, ask students to demonstrate their acquired knowledge about values in design, by creating a value exhibition or a public workshop.

Instructions to students:

STEP 1:

Prepare a demonstration of your design or project. Consider the following questions:

- How can the external audiences or stakeholders be an active part of your demonstration?
- How can you, through your demonstration, invite the external audiences or stakeholders to debate the topic of values in design?
- How can you, through your demonstration, make the embodied value-oriented attitudes visible in your work?
- What kind of artifacts, visuals, flyers do you need to demonstrate your design or product?
- How many activities do you need in order to demonstrate your design or product?

STEP 2:

During the exhibition or public workshop, write down all your reflections, experiences, and feedback from external audiences and stakeholders.

The following steps, are optional:

STEP 3:

Share your written notes with the other students.

STEP 4:

Read the other students' written notes, to deepen and broaden your own reflections (and revise your own notes if necessary).

ASSESSING THE STUDENTS' LEARNING

In this assessment activity, it is important to focus on the students' attitudes in order to capture and address the "visible

Teaching for values in design

LINKS

SUGGESTED FOR TEACHING
ACTIVITIES:

[Value-based reformulation of
the design draft](#)

[Visualising values in design
with mood boards](#)

[Re-designing concepts for
different cultures](#)

[Envisioning future scenarios](#)

signs of learning". The focus should be on how the students, through engaging with a community of practice, can apply or integrate their knowledge in relation to the learning goals and relevant assessment criteria. That is, are the students able to translate and reflect upon new knowledge that they have acquired through the teaching activity into real-life practice, such as an exhibition or a public workshop.

When reviewing and watching the students' exhibitions or public workshops, it might be helpful to pay attention to the following optional proposals for focus points depending on the content of the related teaching activity:

- How broad and deep are the students' abilities to involve, converse or debate the topic of values in design with external audiences or possible stakeholders?
- To what extent did the students meet the assessment criteria listed in the teaching activity?

For further professional development consider:

- Are there specific learning outcomes or assessment criteria that students are particularly successful/unsuccessful in demonstrating?
- Are there any exemplary exhibitions or public workshops that work particularly well in addressing learning goals and assessment criteria (consider sharing these with the students)?

REFERENCES

Davidson, Jill (2009) Exhibitions: Connecting Classroom Assessment With Culminating Demonstrations of Mastery. *Theory Into Practice*, 48(1), 36-43. <http://10.1080/00405840802577585>

CASE DESCRIPTIONS

The case descriptions provide examples of how the teaching activities have been put into practice in the classroom across different disciplines and levels. The cases cover various educational settings and may serve as a source of inspiration on how teachers can apply the activities and plan for their teaching.

Deepening understanding of values before creating value based design requirements

SPECIFICATION

EDUCATIONAL SETTING:

Values in design,
Master's level,
free-standing online course,
part-time (50%),
15 ECTS,
online

TIME:

2 x 2 h workshops (and
homework in between)

NUMBER OF STUDENTS:

7

The students participating in this distance online course usually come from different places and countries. The course was thus run through using a combination of the video conference system Zoom, the online whiteboard Miro and other digital tools like presentation and video editing tools. The students worked individually and reflected upon a design project that they were involved in at the time of the course, or a design project that they had already finished. The students learned with their peers through weekly design review meetings facilitated by the teachers.

The course was structured in a way where each week of the course had a specific theme and assignment (or combination of two assignments) related to values in design. Each week started with a lecture on Mondays about the assignment topic where the assignment was introduced, and relevant literature was discussed. Then students worked on the assignment during the week and presented their assignments to each other Thursday afternoons where they gave each other peer critique.

In the beginning of the course, students worked with their personal values and with stakeholder values. Before they did the first exercise presented in this case description – the value clustering activity – they had identified four core values that were characteristic for the projects that they reflected upon in this course. The idea behind placing the value clustering activity after the identification of project values was to deepen their understanding of each of their project values before they started to create value based design requirements based on their core project values.

While running the activity the students had access to three different value vocabularies: the HuValue Wheel (HuValue, 2021), an overview of values, and 500 value words.

Teaching for values in design

The students worked individually using the online whiteboard Miro for developing their value clusters and presented them to each other in class through their Miro boards, and we had a conversation about each Miro board.

After the value clustering activity, the students continued to work on creating value based design requirements using the value hierarchy worksheet. For each value word, they listed design objectives that were more abstract, in the sense that they expressed a vision behind the design. The design requirements were more concrete suggestions to specific features and materials of their designs.

Below is an example of how a student filled in the value cluster worksheet (Figure 1), followed by value based design requirements developed by using the value hierarchy worksheet (Figure 2).

Figure 1. A value cluster developed by a student on "Sustainability".

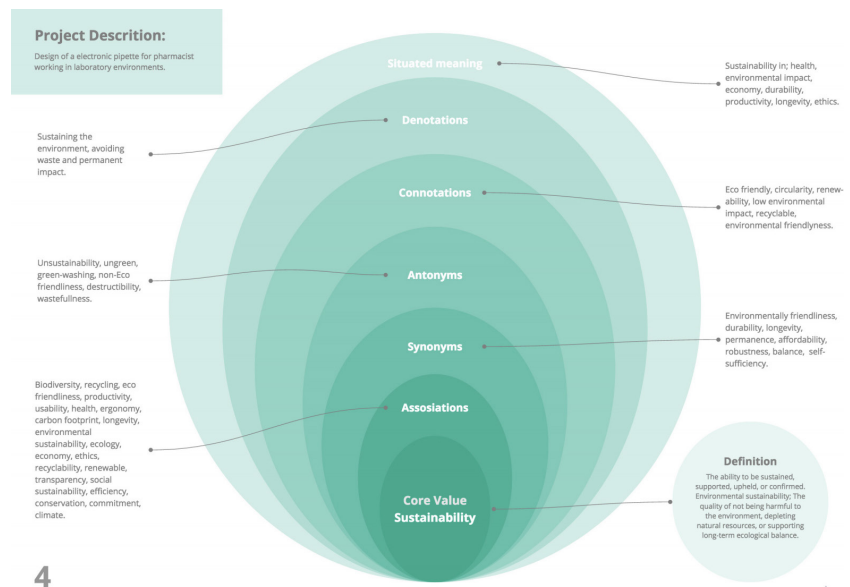
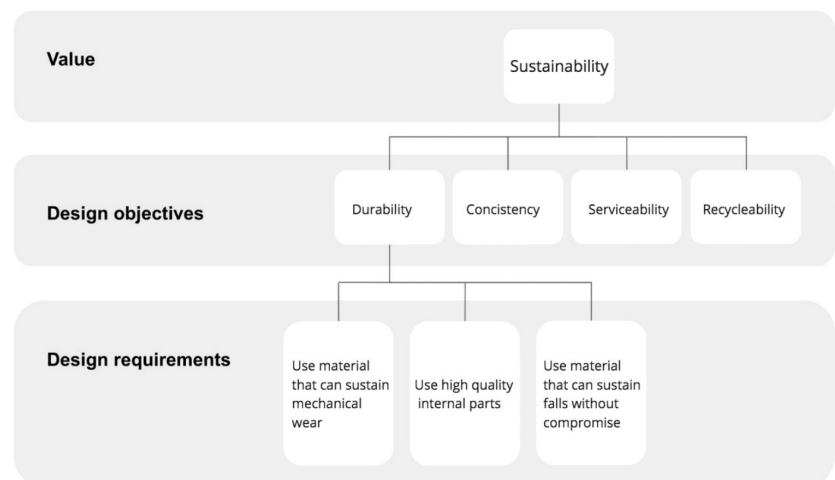


Figure 2. Value based design requirements based on the value "Sustainability". To be used when designing a pipette for a clinical laboratory.



LEARNING OUTCOMES

When going through the value cluster boards with the students, they stated that the diversity of words could be used for these purposes:

- extend the vocabulary used in conversations with various stakeholders during the project: careful wording in the communication would speak to specific stakeholders and concrete situations, and
- a selection of the words from the value clusters could be used in a marketing campaign.

Students found the exercise useful because it made them think out of the box and establish a metaphorical language around their design. We discovered that some words that emerged served as a “bridge” between the core value words, linking them together in very specific ways. Students liked the antonyms that served as a “wild card”, which also made them think out of the box.

In the value hierarchy exercise, students suggested that they would like to have more concrete and precise examples of what, for example, the value word sustainability means in terms of architectural components in one of the projects: type of battery in solar panels, type of isolation etc. In general, discussions around presentations were focused on how they could move from abstract to concrete in order to achieve the values that they wanted to have in their designs.

Other things that were brought up were questions about the kind of work environment in which one of the designs was supposed to be used, moving the focus from physical features of a design to situations and contexts, and even the self-perception of the person using the design: is the design gender-neutral? Some students started to extend the diagram by making distinctions between elements of the diagram: color coding and dashed/solid coding design requirements according to architectural or people based design requirements.

The value hierarchies provided a clear/graspable overview of how the values could be manifested in the product. These overviews can be used when communicating with stakeholders/customers e.g. about exactly how the product can be counted as being sustainable. Or how the value simplicity is being represented both in the visual appearance, but also in its marketing and packaging. The challenge with this exercise is to get from the middle to the bottom level and create a clear distinction between the two: the things mentioned or described in the bottom level should be very concrete. The peer discussions at the presentations about moving from abstract to concrete were very helpful in that regard. A teacher could support and mediate such a discussion by asking questions like: how might your design

Teaching for values in design

LINKS

MATERIALS:

[Worksheet](#)

[HuValue wheel](#)

[Overview of values](#)

[500 value words](#)

[Value hierarchy worksheet](#)

RELATED TEACHING

ACTIVITIES:

[Value clustering for developing students' value vocabularies](#)

[Constructing value based design requirements](#)

support this objective through its core components and functionalities? Which material and look and feel might best achieve this objective?

REFERENCES

Bos-de Vos, Marina (2020). A framework for designing for divergent values, in Boess, S., Cheung, M. and Cain, R. (eds.), *Synergy - DRS International Conference 2020*, 11-14 August, Held online. <https://doi.org/10.21606/drs.2020.374>

Boztepe, Susan (2007) User value: competing theories and models. *International Journal of Design* 1(2), 55-63.

Van de Poel, Ibo (2013). Translating Values into Design Requirements. In: Michelfelder D., McCarthy N., Goldberg D. (Eds.) *Philosophy and Engineering: Reflections on Practice, Principles and Process*. Philosophy of Engineering and Technology. Dordrecht: Springer.

Mapping values in stakeholder relationships and manifesting values in moodboards

SPECIFICATION

EDUCATIONAL SETTING:

Interaction design and Media,
Bachelor's level,
Elective course,
15 ECTS,
on site

TIME:

3 x 1 day workshops

NUMBER OF STUDENTS:

44

In this course, the students worked with digital interface design and the theme social change. The majority of the cases in the course that students worked on was inspired by Hilary Cottam's book "Radical Help – how we can remake the relationships between us and revolutionize the welfare state" (Cottam, 2018). Her book illustrates how she collaborated with designers at a design company to facilitate social change processes at a community level in the British welfare society. With this as an inspirational source, students worked on cases related to ageing well, growing up, good work, family life, good health and circular economy. During the course, they were given three full day workshops focusing on values in design.

In the first values in design workshop, one of the activities was to map value landscapes (see slides in "Materials"). This assignment was placed at the research phase of their design project to support a discussion about the values that stakeholders (might) have: the students' assumptions about stakeholder values or empirical research data showing stakeholder values. The value landscapes were created with board game pieces and they served as a way of discussing stakeholder values in context. Students were distributed around group-based workstations in a classroom, equipped with game pieces, A4 and A3 paper, markers, scissors, small post it notes (bookmark size) and some prints of empty storyboards. The teacher walked between the groups and discussed the progress of their value landscapes during the workshop.

In the second workshop, students worked with value tensions and co-evolution of technology and social structure (Friedman & Hendry, 2019). The second workshop is not covered here, because this case study focuses on how students made a connection between what they identified in

Teaching for values in design

the value landscapes with visual material in the project value moodboards.

In the third workshop, one of the activities was to visualise the project values with mood boards (see slides in “Materials”). This activity and the previous activity relate to each other in the way that students need to be aware of stakeholder relationships and situations in the “value landscapes” in order to create moodboards that manifest the project values in their projects. This workshop was related to the prototyping part of their design process.

Students worked on the moodboard assignment in their groups outside the classroom searching the web and collecting visual materials. When they had gathered the visual materials, there was a presentation day, where one group at a time presented their mood boards in silence. The moodboards did not contain the value words. The rest of the class wrote down the kinds of words that they came to think of when inspecting the presented visual materials. Finally, the group that presented got to learn what those words were, and we discussed which visual materials resulted in which word associations.

Below is one detailed example of a value landscape that students created:

A group working with family life and families with children with autism or ADHD developed a concept that engaged social services in collaboration with the unemployment office where people who search for jobs can help these families – see example of stakeholders in figure 1.

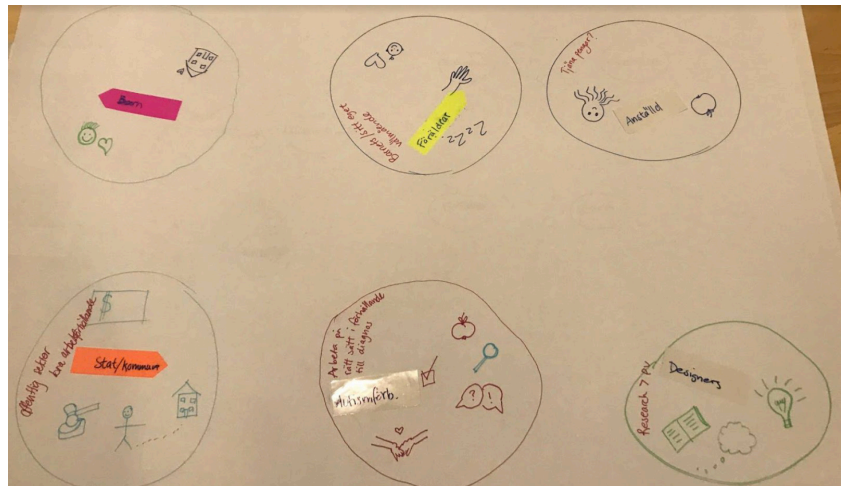
Figure 1. Stakeholders related to family life: child, parents, employees, social services, associations of people with a particular diagnosis, such as autism, and designers.



They placed the stakeholders in circles / spotlights (figure 2) where they added tokens illustrating what they thought were the roles and qualities that each stakeholder should have.

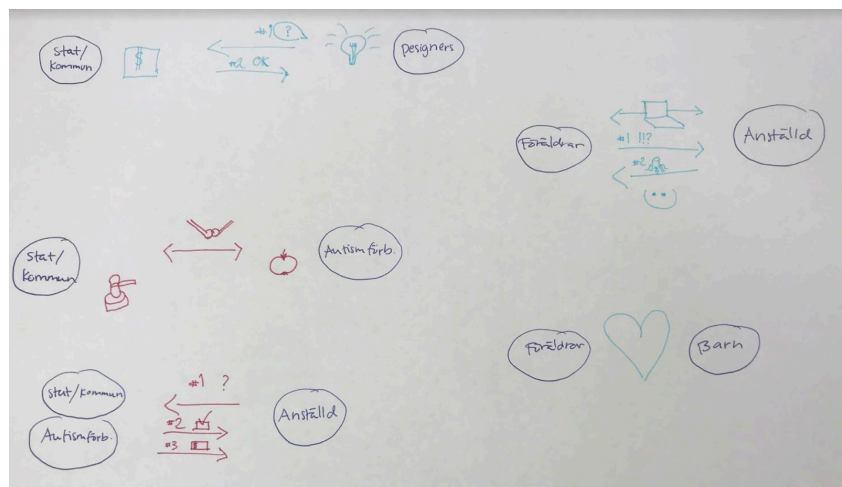
Teaching for values in design

Figure 2. Stakeholders placed in “spotlights” where tokens were added to each stakeholder. Each token identifies a quality or role of the stakeholder.



When drawing the relationships, students illustrated a finding that they made when interviewing the parents of children living with autism or ADHD. The below (figure 3) landscape illustrates the idea that long term job seekers can do an internship where they help these families with practical issues, so that the parents can concentrate on caring for their children. In the research phase, students learned that parents expressed fatigue and that practical help was more appreciated than professional help from family counseling, social workers etc.

Figure 3. Stakeholder landscape with tokens from the spotlights (figure 2) to describe the roles and qualities in stakeholder relationships.



Below is a detailed example of three moodboards (figure 5, 6 and 7) that this group created where they illustrated how family life could be if there was someone who could offer these families practical help. The value words for their concept were openness in relation to the involvement with families, creation of well-being for the parents, safety for the child, and respect – understanding of the family and their everyday life situations.]

Teaching for values in design

Figure 5, 6, and 7. Please notice that the first moodboards did not contain any value words. The student group added the value words later in their presentation where they revealed their project values to the class along with visual material.

Moodboard



Guidelines for photographer



Värdeord



Öppenhet
Inbjudande familjer
Flexibilitet
Rak kommunikation mellan alla inblandade



Välmående
Föräldrarna ska fokusera på familjens välmående
Anställda känner sig behövda och märker att de gör skillnad för familjerna



Trygghet
Barnets trygghet i fokus
Anställdas & familjens trygghet i situationen
Vardagshjälpen - en trygghet



Respekt
Respekt/förståelse för familjens situation

LINKS

MATERIALS:

[Mapping value landscapes slides](#)

[Visualising values in design with moodboards slides](#)

RELATED TEACHING

ACTIVITIES:

[Mapping value landscapes](#)

[Visualising values in design with mood boards](#)

LEARNING OUTCOMES

The value landscapes gave the students an opportunity to re-imagine and re-invent taken for granted relationships between stakeholders in the different cases, based on desired values. Some of the tokens in the different spotlights ended up becoming features of the service they developed – they became icons and buttons. The students preferred drawing storyboards instead of acting out the scenarios. This could have been due to the public classroom setting of the workshop where all groups were present. Some groups made storyboards seen from different stakeholder perspectives.

During the presentation of the moodboards, which was too informal, student groups struggled with remembering which word associations the different visual materials provided. Thus, this kind of assignment would work well if the moodboards were made in a joint online visualisation program (e.g., Miro Mural, Padlet), where student groups could invite other students to comment directly on the visual materials that are placed on the moodboards. In another course, the teacher did this, and below are some examples of mood boards with comments, where the students later added values to the moodboards that only contained visual materials when presented the first time.

REFERENCES

Cottam, Hillary (2018). *Radical Help – how we can remake the relationships between us and revolutionize the welfare state*. London, UK: Virago.

Identifying the designer's, the design team's and the stakeholder's values

SPECIFICATION

EDUCATIONAL SETTING:

Interaction design and Media,
Bachelor's level,
Elective course,
15 ECTS,
online

TIME:

2 x 2 h workshops (and
homework in between)

NUMBER OF STUDENTS:

47

In this course, the students worked with digital interface design and the theme: social change. The majority of the cases that the students could work on were inspired from Hilary Cottam's book "Radical Help – how we can remake the relationships between us and revolutionize the welfare state" (Cottam 2018). Her book illustrates how she collaborated with designers at a design and innovation company to facilitate social change processes at a community level in the British welfare society. With this as an inspirational source, students worked on cases related to ageing well, growing up, good work, family life, good health and circular economy. During the course, students had value based workshops and ran processes, focusing on values in design. Here one workshop and one process will be described and how they relate to how values in a project are defined on multiple levels.

In the first workshop, the students started with identifying their own personal values. Thereafter, they used their personal values to determine which values they would have as a team. They formulated their design teams' value manifesto (see "Materials" for slides with instructions and worksheets).

The students went through a process building on the initial stakeholder research phase of their projects where they, among other things, had gathered stakeholder data and analyzed it through the affinity diagram (IDF, 2021) method. This process ran in parallel with the analysis and concept development phase of the project that they were working on as part of the course. The process resulted in a list of four identified project values.

Teaching for values in design

Thereafter, they went into the process of mapping and negotiating the project values with their stakeholders (see Materials for instructions and worksheets):

Step 1: Initial project values

Step 2: Stakeholder's values

Step 3: Value negotiations

Step 4: Values agreement

Finally, students submitted the values agreement as an identification of operational project values.

Since the course ran online, students worked remotely, and all the workshop materials were presented to them via video conferencing and were shared via a digital learning platform. The members of the student teams also worked with each other remotely via an online digital whiteboard.

LEARNING OUTCOMES

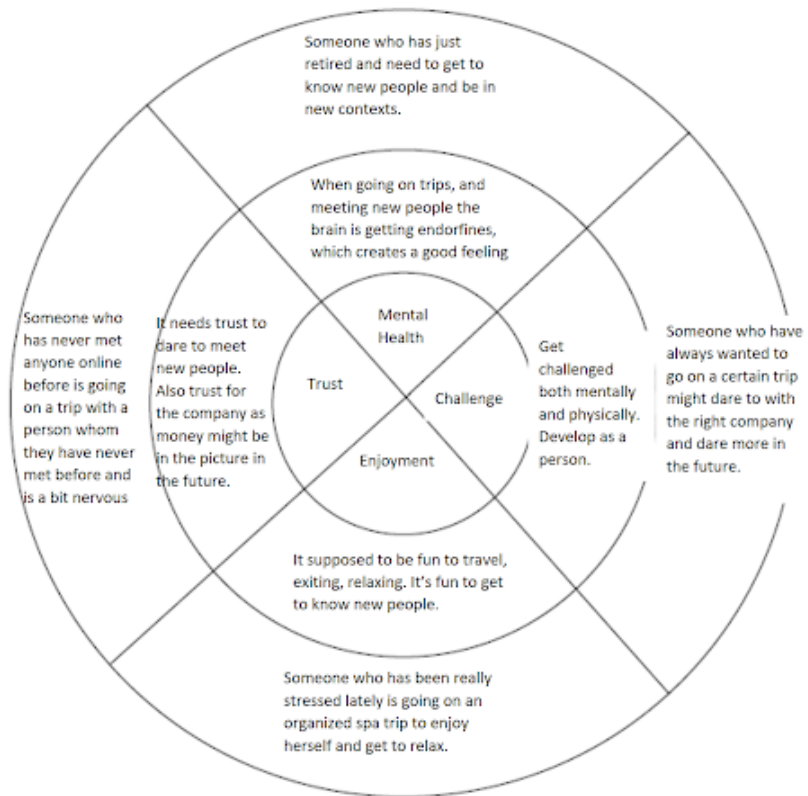
As a response to the first workshop, the design teams' workshop manifestos showed that the teams tended to identify the work spirit of their design team, and that they imagined that they would be a design team working at a design consultancy. For example, they also considered relations to collaboration partners and clients.

One student team added meaningfulness as a supervalue, then respect for each other, including collaboration partners, resources, work environment and development. Since some of these words might mean several things, the team added a few keywords and sentences to specify what they meant by each value. Another student team just stated the values. In another worksheet that students submitted, team values were followed by a range of keywords that the student team associated with each value. These keywords deepened and specified their desired understanding of each value mentioned. It was clear from many of the teams that personal and collective development and community / sense of belonging and supporting each other appeared as values. All team manifestos showed values associated with teamwork and design processes. However, it was unclear if the values mentioned also represent personal life values. In case teachers want the students to reflect on which of their life values a design teams' value manifesto should contain, for example representing their design consultancy, then a teacher might need to emphasize this in the introduction of the assignment.

As a result of the project value process, student teams created value agreements. See an example below:

Teaching for values in design

Figure 1. A communication service and network for elderly women who can meet and arrange/join social activities.



The above example explains what each of the values meant in the context of elderly womens' life situations and was based on insights from interviews with elderly ladies. Students highlighted the following: to dare to meet other people and trust people who you do not know. To be challenged to try new things in good company etc.

Another team that worked with a professional networking platform for job seekers and employers listed the values: equality (understood as inclusivity), ambition, structure and reliability. This team's project values led to a focus in their project where the platform should prevent judgement based on physical appearance and skin color. It should speak to the personal dreams of the job seeker in order to encourage engagement, and it should provide a communication structure between job seeker and employer so that both parties could count on each other.

In the reports submitted by the students, most stated that the project values gave them a way to focus throughout their design process. It worked like a compass that provided direction in the idea development phase, and it guided choices of visual materials and text through which students communicated with their users through their prototypes.

When looking back on the project value process, perhaps some of the steps in the project values process were

Teaching for values in design

LINKS

MATERIALS:

[Designer's and design team's value manifesto slides](#)

[HuValue wheel](#)

[Core values list](#)

[Designer's value manifesto worksheet](#)

[Design team's value statement manifesto worksheet](#)

[Mapping stakeholder's value instructions](#)

[Initial project values worksheets](#)

[Value negotiations worksheet](#)

[Value agreement worksheet](#)

redundant. Another way of using the values agreement worksheet could be to use it as a way to generate provisional stakeholder values that students can arrive at from an analysis of the stakeholder research data without being in direct and continuous dialogue with stakeholders about the project values.

REFERENCES

Cottam, Hillary. (2018). *Radical Help – how we can remake the relationships between us and revolutionize the welfare state*. London, UK: Virago.

HuValue (2021). A Tool to Enrich Design Concepts with Human Values. Retrieved on 2021-06-16 from <https://huvaluetool.com/>

Interaction Design Foundation (2021). Affinity Diagrams – Learn How to Cluster and Bundle Ideas and Facts. Retrieved on 2021-06-12 from <https://www.interaction-design.org/literature/article/affinity-diagrams-learn-how-to-cluster-and-bundle-ideas-and-facts>

RELATED TEACHING

ACTIVITIES:

[Individual designer's values identification and hierarchy](#)

[Design team's value identification and hierarchy](#)

[Design team's value manifesto](#)

[Project values identification](#)

Understanding future scenarios based on stakeholders and their values

SPECIFICATION

EDUCATIONAL SETTING:

Product design and people,
Bachelor's level,
Department of Media
Technology and Product
Development,
7,5 ECTS
online

TIME:

2 x 2 h workshops (and
homework in between)

NUMBER OF STUDENTS:

27

In this course Product design and people, students worked in 3-5 person teams on a project that ran throughout a 10 week course period. They worked on cases related to the theme of sustainability such as recyclable product components, upcycling, packaging-free supermarkets, indoor food production etc. The course had a particular focus on the human life aspects and perspectives, so it was natural to include values in this course.

After being introduced to the basic theoretical perspectives on values in design (Friedman & Hendry 2019), the students engaged in a selection of activities to get a good grasp of the human perspectives of a product: values, context, life situations. Two of these activities applied in this course are presented here:

1. an investigation of stakeholder values, and
2. the creation of utopian and dystopian future scenarios related to how students imagine their products being appreciated by the stakeholders.

Since the course happened during the pandemic period, students worked remotely from their homes, and all the workshop materials were presented to them via video conferencing and shared via a digital learning platform. The members of the student teams also worked with each other and stakeholders remotely via an online digital whiteboard.

The assignments and accompanying worksheets were introduced verbally through video conferencing along with the other weekly design methods. Since the course was focused on practical work related to model construction, the course literature was focused on design methods (Boeijen et al., 2014) with recommended literature on values in design (Friedman & Hendry, 2019, p. 35-44).

Teaching for values in design

In week two of the course, being in the middle of the research phase, the students were to identify their stakeholders. When having analyzed data from their stakeholder research through affinity diagrams, the student groups were asked to fill in the direct and indirect stakeholder worksheet (see “Materials”) based on the insights that they had gathered.

In week five of the course, being in the middle of the idea development phase, the students got the task of creating utopian and dystopian future scenarios of their ideas (see “Materials” for instruction slides). In this process, student groups got inspired from the Design with Intent toolkit (2015), and they were also provided with the future scenario envisioning cards (Envisioning cards, n.d.), so that they could take the aspects like stakeholders, time, values and pervasiveness into account. Finally, students were offered a specification sheet for future scenarios, where they could document their ideas.

LEARNING OUTCOMES

The results of the stakeholder identification and analysis show that students considered a wide array of stakeholders. One team included the designer as well as people who cannot afford the design. Another team included non-human stakeholders. In a few teams where non-human stakeholders were considered, values were confused with functions, and harms were sometimes connected to malfunction of the product. Here the teacher could make it clear that values are different from functions, and that a product might be harmful, even if it is not malfunctioning. The below examples are in Swedish because the course was taught in Swedish, but are here included to illustrate an example of the students visually presented their reflections.

In example below, the team worked on a product that allowed people to grow edible plants in their homes:

Figure 1. One of the things students evaluated as “benefits” was better indoor climate and good self esteem (this also included the designer). One of the harms was the feeling of not succeeding in growing edible plants. The team considered the house owner who rented out a flat being worried about the product – if mismanaged or broken – creating water damage.

Intressent (Stakeholder)	Nyckelvärden (Key Values)	Fördel (Benefits)	Nackdel (Harms)
Köparen	<ul style="list-style-type: none">• Miljömässig hållbarhet• Värdesätter mat	<ul style="list-style-type: none">• Ger ett hälsosammare alternativ	<ul style="list-style-type: none">• Förlust av inkomst
Andra i hushållet	<ul style="list-style-type: none">• Miljömässig hållbarhet• Värdesätter mat• Valmöjligheter	<ul style="list-style-type: none">• Färska grönsaker• Starkt självkänsla• Bättre mat	<ul style="list-style-type: none">• Tidsförlust• Upplevelse av misslyckas• Förlorad yta
Matbutiker och producenter	<ul style="list-style-type: none">• Ekonomisk hållbarhet	<ul style="list-style-type: none">• Mindre varor som slängs	<ul style="list-style-type: none">• Förlust av inkomst
Återförsäljare av produkten	<ul style="list-style-type: none">• Ekonomisk hållbarhet• Visst miljömässigt intresse	<ul style="list-style-type: none">• Rykte• Ökad inkomst	<ul style="list-style-type: none">• Rykte
Investorare	<ul style="list-style-type: none">• Ekonomisk hållbarhet	<ul style="list-style-type: none">• Inkomst av kapital	<ul style="list-style-type: none">• Förlust av kapital

Teaching for values in design

Intressent (Stakeholder)	Nyckelvärden (Key Values)	Fördel (Benefits)	Nackdel (Harms)
Användare	<ul style="list-style-type: none"> • Miljömässig hållbarhet • Värdesätter mat • Valmöjligheter 	<ul style="list-style-type: none"> • Färska grönsaker • Stärkt självkänsla • Hälsofrämjande 	<ul style="list-style-type: none"> • Tidslöslust • Upplevelse av misslyckas
Köparen	<ul style="list-style-type: none"> • Miljömässig hållbarhet • Värdesätter mat • Valmöjligheter 	<ul style="list-style-type: none"> • Bättre mat • Bättre relation till förmånstagaren 	<ul style="list-style-type: none"> • Förlust av kapital • Sämre relation till förmånstagaren
Bostadsägare	<ul style="list-style-type: none"> • God hemmiljö • Orolig för skaderisk 	<ul style="list-style-type: none"> • Bättre inomhusmiljö • Bättre luftkvalité inomhus 	<ul style="list-style-type: none"> • Skada på fastigheten (t.ex. vatten, brand)
Individer som inte har råd eller funktion att använda produkten	<ul style="list-style-type: none"> • Värdesätter mat eller hemmaodling 		<ul style="list-style-type: none"> • Upplevelse av att bli exkluderad
Produktdesigner	<ul style="list-style-type: none"> • Miljömässig hållbarhet • Värdesätter frivsam hemmamiljö 	<ul style="list-style-type: none"> • Rykte • Stärkt självkänsla 	<ul style="list-style-type: none"> • Rykte • Försvagad självkänsla

The future scenarios showed that not all students reflected deeply on how the scenarios made them re-consider aspects of their design (see more in the final note below the examples). All the examples are in Swedish because the course was taught in Swedish.

In [example 1](#), a group worked on a neighborhood shopping station for food that is close to expiry date. They made use of some interesting personas like an environmental activist and an elderly lady and used the same personas in utopian and dystopian scenarios. They considered which types of products would work and how this kind of shopping affected the consumers' self image.

In [example 2](#), a group that designed a mobile food growing station considered the consequences for supermarket chains – which types of products they could not sell anymore. The group considered the huge electricity consumption it would take to grow the food in the dark Scandinavian winters, and they even considered an increase of insects in private housing that would have a negative effect on home environments.

In [example 3](#), the group reflection on how the scenarios made them re-consider aspects of their design: pricing, appropriate instructions for how to manage the product, extra features and parts that can replace broken parts and expansion of food production in the home through modules. This indicates that the scenarios made them think out of the box.

Final note: it became evident that the student teams needed in-class time, both during the work with their exercises, and also afterwards. The benefits of in-class work are that teachers can walk around between the groups and pop into the group discussions and talk about the materials that they work

LINKS

MATERIALS:

[Instructions for the creation of utopian and dystopian future scenarios slides](#)

[Direct and indirect stakeholders analysis worksheets](#)

[Design with intent toolkit](#)

[Future scenario envisioning card](#)

[Future scenario spec. sheet of design idea](#)

RELATED TEACHING

ACTIVITIES:

[Listing stakeholders and their values](#)

[Envisioning future scenarios](#)

with along the way. This could have been facilitated through break-out rooms via Zoom. Furthermore, teachers should also dedicate time to follow up on the student work through plenum discussions, where everyone can reflect on each other's material. Perhaps through some sort of peer-review or opponent process.

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Working with stakeholder value tensions

SPECIFICATION

EDUCATIONAL SETTING:

Values in design,
Master's level,
free-standing course,
part-time (50 %),
15 ECTS
online

TIME:

2 x 2 h workshops (and
homework in between)

NUMBER OF STUDENTS:

7

In this distance course on Values in Design, students came from different countries and different places in Sweden. It was run through a combination of video conferencing, digital whiteboard and other digital tools like presentation and video editing tools. The students worked individually and reflected upon commercial products, systems or services, and finally, on a design project that they were involved in at the time of the course, or a design project that they had already finished. The students learned with their peers through weekly presentations.

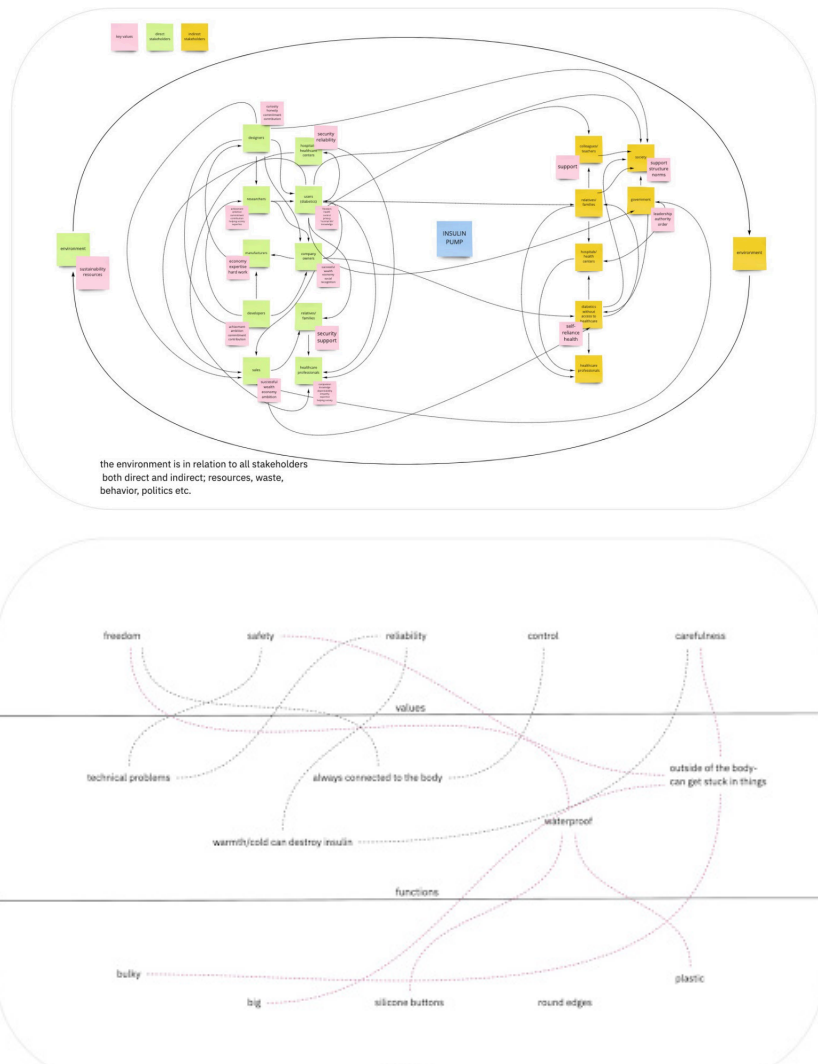
The course was structured in such a way that each week of the course had a specific theme and assignment (or a combination of two assignments) related to values in design. Each week started with a lecture on Mondays about the assignment topic where the assignment was introduced, and relevant literature was discussed. Then students worked on the assignment during the week and presented their assignments to each other on Thursday afternoons where they gave each other peer critique. The teachers facilitated the peer critique sessions.

This case shows the results of two exercises: firstly, a stakeholder values elicitation (see "Materials" for slides) that builds upon an introduction to working with stakeholder values (see "Materials" for slides) and an exercise where students listed stakeholders and their values (see "Materials" for slides). Students investigated a commercial product, system or service of their choice. This happened in week 6 of the course. In week 9 of the course, students did an analysis of the value tensions that were present in their own projects that they reflected upon during the course.

LEARNING OUTCOME

Both exercises led to some in-depth reflections about a great array of stakeholders' values and how these values might be manifested in a product, system or service. When the students later reflected upon value tensions, they showed an understanding that values manifested through product functions and attributes could be in tension with each other in the actual product, system or service.

Figure 1 and 2. Student investigating an insulin pump.



In the example in Figure 1 and 2, a student investigated an insulin pump and the key values related to direct and indirect stakeholders in a diagram made in Miro. The student considered the human support structure around the use of an insulin pump, and considerations on the environment were also included. In the values elicitation diagram that followed, the student highlighted safe use of the pump, which was translated into it being waterproof. This then again led to considerations about which materials the pump and its components should consist of.

Teaching for values in design

Figure 3. Investigation of the Gillette razor.



In Figure 3, an example of a student investigating the Gillette razor is given. What is clear from this figure is that the student considered many other aspects of this product as stakeholders and it seemed like the student needed a discussion on the definition of "stakeholder". While Friedman and Hendry 2019 present a broad definition of stakeholders, teachers might still need to discuss how we might define what is a stakeholder. While the stakeholder values elicitation worksheet looked logical in terms of content, the student did not make a connection between values, and the resulting functions and attributes.

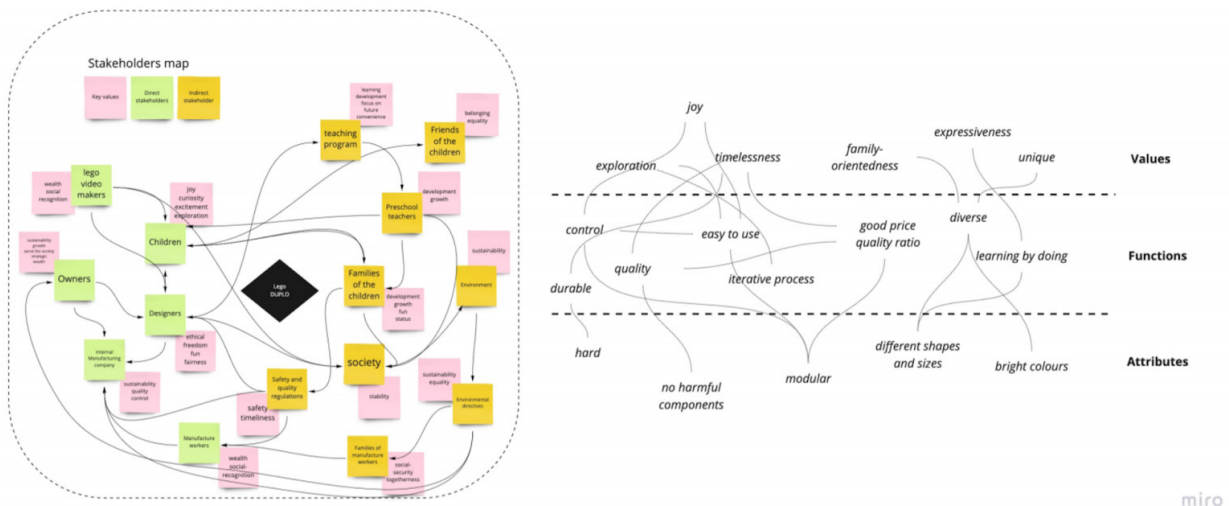


Figure 4. Student investigating Lego duplo blocks.

In Figure 4, a student investigated Lego duplo blocks. In the stakeholder map, there seemed to be a certain association about their role in indicating status and representing education and how that in turn had an impact on society.

Teaching for values in design

LINKS

MATERIALS:

[Introduction to stakeholder values slides](#)

[Identify direct and indirect stakeholders instructions](#)

[Stakeholder values elicitation interview, instructions and worksheet](#)

[Introduction to value tension slides](#)

[Value dams and flows three step process instructions](#)

[Worksheet 1](#)

[Worksheet 2](#)

[Worksheet 3](#)

RELATED TEACHING

ACTIVITIES:

[Listing stakeholders and their values](#)

[Stakeholders value elicitation](#)

[Understanding value tensions](#)

It also included considerations for the environment and manufacturing workers. In the value elicitation diagram, the student traced values to functions to attributes. For example: family-orientedness led to diversity, that then led to different shapes and sizes.

The two examples below are an in-depth presentation of one student's work: an analysis of a project that evolved around an online messenger app based on face-to-face communication values. In the two worksheets that were associated with the value tensions worksheets, the student had many elaborate considerations on what it meant to pay attention to additional modalities in media communication. The student reflected on four project values that were identified in a previous week of the course. The main tension that the student identified was that additional modalities would bring people closer to each other, even though they were not physically co-present. In that way, remote communication could become too intrusive, when people are always available through their devices and through remote communication forms. For your own interpretation, please inspect the two worksheets here: Value tensions worksheet 2 and worksheet 3.

The results from the values dams and flow exercise made some students reconsider their core values, and rethink how the products might be experienced by different stakeholder groups. Through the exercise the dynamics between different values became clear, and how different stakeholders may be affected by these dynamics. By identifying potential tensions, and coming up with proposals for how to resolve them, the students were given tools for balancing these different viewpoints. They realised that one value does not have to go at the expense of another. Instead, they can try to find a balance and through that prevent potential conflicts from occurring.

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Stakeholder identification: Identifying direct and indirect stakeholders of an e-commerce site

SPECIFICATION

EDUCATIONAL SETTING:

Interface analysis,
Information studies,
Bachelor's level,
10 ECTS,
on site

TIME:

30 minutes

NUMBER OF STUDENTS:

100

The teaching of this course on Interface Analysis was located in a lecture hall, with 100 bachelor students in Information studies.

The aim of the activity was to create an awareness among the students about the existence of direct and indirect stakeholders, and that they represent various types, needs and interests.

In the first part of the exercise, the students were asked to work in pairs for 15 minutes to fill out the worksheet for direct and indirect stakeholders analysis (see "Materials") and their values of eBay. During the exercise, the teacher showed a slide listing several values for inspiration.

In the second step of the activity, the students were asked to use Mentimeter to report back:

1. Three most relevant stakeholders (direct or indirect),
2. Three most relevant stakeholder values.

The result was visualized as a word cloud projected on the wall. The teacher asked the students to reflect on the differences and similarities, but also the challenges and benefits of identifying diverse stakeholders. The span of stakeholders ranged from the police and relatives to people who had been burgled, to sellers and buyers.

Afterwards, the teacher published the result of the activity on the university learning management system so that the students could access it (see "Materials").

Teaching for values in design

Fig 1 and 2. Word clouds of Relevant stakeholders and Stakeholder values.



LINKS

MATERIALS:

Slides

Worksheet

[Mentimeter.com](https://www.mentimeter.com)

RELATED TEACHING

ACTIVITIES:

Listing stakeholders and their values

TEACHER ROLE

The teacher facilitated the learning through providing a short introduction to the activity, keeping time, answering questions, controlling the Mentimeter, and facilitating discussion afterwards.

LEARNING OUTCOMES

After having completed the teaching activity, students were supposed to know the difference between indirect and direct stakeholders, and to distinguish specific types of stakeholders.

REFLECTION

When running this kind of exercise, it appeared that students tended to spend too much effort trying to familiarize themselves with and formulate values, and less time to come up with stakeholders. It is therefore important to make sure there is enough time and emphasis on both. However, in the given time, the activity was successful in the sense that all students managed to list some direct and indirect stakeholders with corresponding values, and as such they lived up to the expected learning goals.

Values Clustering: a case study on two teachers' appropriations

SPECIFICATION

EDUCATIONAL SETTING:

International Design & Media,
Bachelor's level,
free-standing course,
15 ECTS,
online

Design: Theory, method and
practice,
Master programme in ICT-
Based Educational Design
free-standing course,
20 ECTS,
online

TIME:
1 hour

NUMBER OF STUDENTS:
28 + 17

This case study reports on two teachers' appropriation of the teaching activity Values clustering for developing students' value vocabularies. It provides insights into how this particular teaching activity can be appropriated in different educational settings, what the teachers' perceived effectiveness of this activity is, and what kind of adaptations individual teachers may need to make to fit them into their particular course.

The case study serves as an example for how discussions and actions around values in design can be framed and implemented in the classroom. It also serves as an example of how a teaching activity can be appropriated to various contexts, but without losing its essence in terms of the learning goals the activity strives to fulfill.

READ THE FULL ARTICLE:

Nilsson, Elisabet M.; Barendregt, Wolmet; Eriksson, Eva; Hansen, Anne-Marie; Toft Nørgård, Rikke; and 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)*. Association for Computing Machinery, New York, NY, USA, Article 98, 1–8.

Fostering an identity as a responsible designer among students

SPECIFICATION

EDUCATIONAL SETTING:

International Design & Media,
Bachelor's level,
Elective course,
15 ECTS,
on-site

TIME:

2 x 2h workshops (and
homework in between)

NUMBER OF STUDENTS:

40

LINKS

RELATED TEACHING ACTIVITIES:

[Project values identification](#)

[Constructing value-based
design requirements](#)

This case study reports upon how a repertoire of values-oriented teaching activities can stimulate a sense of responsibility and professional identity in design students and support them in going from knowledge to action. The case includes a description of teaching activities run at three consecutive workshops where the students were introduced to various methods for designing with values. The results from workshops one and two are presented, and how the teaching activities Project values identification and Constructing value-based design requirements were combined and appropriated to fit this particular educational setting.

As indicated by the results, working with values gave the students a direction in their design projects, and gave them insights into the importance of taking responsibility for their actions as designers. They also became aware of the importance of identifying stakeholders' values in order to understand how a design might target and affect a specific stakeholder group. As also indicated, some of the students developed an increased confidence, which may foster a professional identity of being a responsible designer that can contribute to a sustainable and sound development of society.

READ THE FULL ARTICLE:

Nilsson, Elisabet M.; Barendregt, Wolmet; Eriksson, Eva; Hansen, Anne-Marie; Toft Nørgård, Rikke; and 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)*. Association for Computing Machinery, New York, NY, USA, Article 98, 1–8.

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Colofon

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