Addressing Sustainability in Visual Design Education

Master's thesis

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Abstract

Sustainability is being gradually adapted as a framework in Design in general and in Design Education in particular. However, this is rarely the case when considering Visual Design. To strengthen Sustainability in Visual Design Education, this research suggests seven principles that need to be taught to students at a bachelor's degree level. These principles are suggested in the context of traditional Design Education, based on the study case of the bachelor program in Visual Design at the The Royal Danish Academy of Fine Arts. They include: questioning the assumptions, applying systems thinking, cooperating with others, working for the long-term, rethinking resources, shaping the narrative and mediating complexity. In this research, interviews with stakeholders and Design experts as well as findings from the literature, were synthesized to formulate the suggested solution. After a series of reflections on the overall changes in the paradigm of Design and the way they affect Design Education in the context of Sustainability, this research provides both a conceptual model to be used strategically by faculty management to structure the content of the study program, and concrete principles to be used by teachers to address Sustainability in the context of their existing classes. However, a co-creative dialogue with the stakeholders at KADK shows that even though the solution is relevant and applicable, there is a need for broader educational change to address both the current challenges and emerging needs within Design Education.

Acknowledgments

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I would also like to thank the experts who kindly agreed to be interviewed for this work: Ulla Ræbild from Design School Kolding, Zeenath Hasan from Linnaeus University, Christian Tollestrup from Aalborg University and Tina Slåttedal Jacobsen from Designit Oslo.

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Introduction

As a result of the urgent global challenges facing humanity, and on the basis of extensive changes in the field of Design, Sustainability is being gradually adapted as a framework in Design in general and Design Education in particular. One example is the adoption of the UN Sustainable Development Goals (SDGs) as part of the strategy of The Royal Danish Academy of Fine Arts (KADK) since 2016. However, although this is the case for many areas in Design, such as Industrial Design, Fashion Design and Textile Design, it appears that Visual Design is not playing a significant part in this trend.

The basic hypothesis of this work is that Visual Designers can address Sustainability from within their practice, and it is the author's contention that Visual Design Education should provide designers-to-be with the tools and mindset to do so.

The goal of this research is therefore to define how to address Sustainability in Visual Design Education, and more specifically to outline what can we teach Visual Design students for them to be equipped to address Sustainability.

Given the inherent complexity of Sustainability and the diverse characteristics of Design Education, there is no single answer to this question. The solution that this work offers was designed to match the unique characteristics of the bachelor program in Visual Design at KADK. The context of the School (established in 1871) as a traditional design educator, set the borders and constraints for the proposed solution.

CHAPTER 1

FOUNDATIONS OF THIS THESIS

This chapter begins by outlining the main learning objectives of this research. It explores the disciplinary areas of the project, presents the partners collaborating in this work, lays out the overall research plan and concludes with a reading guide for the entire thesis.

1.1 Learning objectives

The learning objectives for this thesis follow both the official objectives defined by the Service Systems Design department at Aalborg University, and the author's personal learning goals. The following acquisition of competencies, skills and knowledge for mastering the profession of Service Design is expected to be demonstrated.
The official objectives, according to Aalborg University (2017) are:

Knowledge

- Must have knowledge about the possibilities to apply appropriate methodological approaches to specific study areas.
- Must have knowledge about Design theories and methods that focus on the design of advanced and complex product-service systems.

Skills

- Must be able to work independently, to identify major problem areas (analysis) and adequately address problems and opportunities (synthesis).
- Must demonstrate the capability of analysing, designing and representing innovative solutions.
- Must demonstrate the ability to evaluate and address (synthesis) major organizational and business issues emerging in the design of a product-service system.

Competencies

- Must be able to master Design and development work in situations that are complex, unpredictable and require new solutions (synthesis).
- Must be able to independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility (synthesis).
- Must have the capability to independently take responsibility for own professional development and specialization (synthesis).

Personal learning goals

- Experience working collaboratively with an organization.
- Facilitate discussion with different actors, involving different stakeholders in a collaborative design process.
- Learn from people with different points of view and various types of knowledge, and use this learning to create value for all involved.
- Contribute to the empirical framework of Design Education.
- Contribute to KADK with meaningful insights to strengthen the understanding of Sustainability among future designers.
- Learn about and reflect on the changes in the fields of Design.

- Apply contemporary principles of Design in the work: collaboration in the form of co-design and transparency.

1.2 Disciplinary areas

The following section maps the relevant theoretical contributions and the disciplinary areas that frame this project. Following that, the study case of this thesis will be presented.

Service System Design

The context of this project is Design Education, mainly how Service System Design can be applied to develop and prototype ways to implement Sustainability within Visual Design Education at the level of a bachelor's degree. The practice of Service Design emerged as part of the emergence of post-industrial societies, with strong service economies, in the latter half of the 20th century. It emerged as an approach focusing on services in their entirety: aiming to plan and organize people, infrastructures, communications and the material components of a service, to ensure it is user-friendly, productive and pleasurable for users and customers, and that it is competitive, profitable and sustainable for the service providers (Irwin et. al. 2015). Trischler & Scott (2016) emphasize the two main aspects of Service System Design, which were found relevant for this project: namely a systemic aspect and user-centred design. The systemic approach is required to address the complexity. Service Design frames problems within larger socio-technical contexts and comprises dynamic relationships between people, products, social activities and infrastructures (Irwin et. al. 2015). However, it has been argued that users do not experience the complete system but merely a personal pathway through the system (Buchanan 2001). Therefore, from a Design perspective, it is important to centre the process and the solution on the user's point of view. Nonetheless, the users are not considered to be passive actors, but rather active agents having their own responsibility in the value creation process (Vargo et. al. 2014).
From a methodological point of view, Service System Design follows both the workflow and the ways of thinking of the design process, involving an iterative approach based on a flexible set of tools borrowed from other areas, such as marketing, branding and User Experience Design. It includes phases of research, ideation, prototyping, and implementation which transform insights from users' preferences and behaviour to new or improved service offerings (Stickdorn et. al. 2018).

Design for Sustainability

Design for Sustainability emerged during the 1980s as the first wave of 'Green Design'. It was the second wave in the 1990s that increased these environmental applications and transformed its name to 'Eco-Design'. During that time, Design for Environment principles began to enter supply chain management (Akama et. al. 2014). In the late 1990s and early 2000s, research groups focused mostly on product end-of-life issues. This was an engineer's domain and

therefore the user was mostly ignored until the field of User Experience focused attention on Design as a research area. Design researchers were increasingly exposed to tools and methods aimed at understanding user behaviour in relation to products and environments (Box 2018). During the 2000s, terms like 'Sustainable Design', 'Design for Sustainability' and 'Design for Sustainable Development' began to emerge. Akama et. al. (2014) conclude that *"this decade is characterised by a world-wide concern for climate change and so businesses began implementing various measurement models like the Triple Bottom Line, 'Cradle to Cradle' and Life Cycle Assessment to demonstrate the impact in emissions from a product's production. Design, being a largely commercial and client-led practice, responded to such shifts and began to promote design thinking to achieve incremental and radical innovation"*. However, in recent years, Sustainability is being addressed outside of this specific context. This project is such an example of this trend.

Design for Policy

Designing a higher education program can also be addressed within the context of 'Design for policy', a discipline that emerged over the last decade. Design for policy evolved out of service and user-centred / participatory approaches in which all stakeholders and constituents are involved in the design process (Irwin et. al. 2015). Realizing there are no easy solutions when wishing to address issues regarding Sustainability, this project is focused on defining the problem-space through anthropological, qualitative, user-centred and data visualization approaches and methods, to aid policy-makers construct a more Sustainability-oriented study program and open spaces for negotiation, mutual understanding and collective ownership of ideas, as suggested by Irwin et. al. (2015).

Design for Change

The terms 'Design Activism' (Markussen 2013), 'Design for Change' (Linnaeus University 2019) and 'Transition Design' (Irwin et. al. 2015) are centred on the understanding that the world is changing rapidly, and on the motivation to implement change through Design. Markussen (2013) defines the role of Design Activism in three areas: questioning the status quo, raising awareness, and/or promoting social change. The 'Design for Change' program at Linnaeus University (2019) defines a designer as *"a change agent with the capacity to intervene critically and creatively within a diverse range of contexts to facilit*ate susta*inable change"*. According to Irwin et. al., (2015), Transition Design *"takes as its central premise the need for societal transitions to more sustainable futures and argues that design has a key role to play in these transitions"*. One way or another, all these terms reflect the drive at the core of this master's thesis.

Co-Design

The discipline of Design emerged from a rich history of craft (Meyer et. al. 2020). As a result, for many decades the designer was perceived as an expert in his or her own practice, and therefore as the one who knows best how this needs to be done. Design was often perceived as an individual artistic practice (Redström 2020) centred on the designer's talent and skills and derived from them. At the same time, users were perceived as passive, who contributed by

performing instructed tasks and / or giving their opinions about product concepts generated by others.

As mentioned by Sanders et. al. (2008), since the 1970s users have been more involved in the design process, in a 'collective creativity'. They have had increasing influence and more room for initiative in roles where they provide expertise and participate in the informing, ideating, and conceptualising activities in the early design phases. That led to the development of the 'user-centred approach' which became widespread by the 1990s. However, this approach can address neither the scale nor the complexity of the challenges we face today. To meet them, users are now often involved in the design process as partners, in what has come to be known as 'co-design'. Here *"the roles get mixed-up: the person who will eventually be served through the design process is given the position of 'expert of his/her experience', and plays a large role in knowledge development, idea generation and concept development"* (Sanders et. al. 2008). This follows the recommendation of Manzini (2006) that *"Designers should not (try to) impose their ideas of what they think should be done, but they should actively and positively participate in the social processes where these new and promising ideas are emerging."* Such designers have the advantage of mediating and organising diverse opinions by planning a clear purpose and scope of collaboration, ultimately culminating in the implementation stage (Lee et. al. 2019).

The original intention of this master's thesis was to work as co-creatively as possible through interviews and conversations with users and stakeholders, meetings and workshops. However, the COVID-19 crisis challenged this aspiration, as will be discussed later.

1.3 Collaboration

This master's topic was chosen based on the belief that education is crucial to impacting the future. The way to change how we design towards a more sustainable way of living lies in the education of the next generation of designers. It is the author's view that Sustainability, as well as other contemporary challenges, should not be approached only on a master's degree level, as an 'extra layer' of content, but rather that it needs to be implemented in the education process from the very beginning. This is thus the reason for choosing to collaborate with the bachelor's degree program.

As mentioned in the Introduction, Sustainability in Design Education is a trending topic. However, most of the existing research relates to disciplines that create tangible products. Visual Design, which is not necessarily centred on production, gained less attention in this context (as will be further elaborated in Chapter 2).

The author of this thesis was educated both as a Visual Designer and a Service System Designer, and worked as a Graphic Designer for many years. Her motivation for choosing this study case was to contribute to the field of Visual Design, and create new knowledge by combining skills and understanding drawn from the two disciplines.

KADK

The study case of this thesis is the bachelor program in Visual Design at the School of Design in the Royal Danish Academy of Fine Arts (KADK). The Danish Design School, today part of KADK, was founded by the Danish Women's Society in premises leased from the Industrial Association. The object of the school was to *"provide women with training in drawing and other skills and abilities that might prove useful to them when seeking employment in the service of industry"* (KADK website). This background became part of what Mathilde Aggebo, Head of the School of Design in KADK calls 'KADK's DNA' (Appendix 3), meaning a high level of craft and aesthetics, while focusing on employment for the school's graduates.
In 1930 The School of Arts and Crafts was established by merging The Craft School of the Danish Museum of Decorative Art and The Technical Society's Schools' department of art industry. In 1967 the School was merged again, this time with The School of Drawing and Art Industry, to create The School of Arts and Crafts and Art Industry (Kunsthåndværker og Kunstindustriskolen), which six years later emerged as The School of Decorative Art (Skolen for Brugskunst). In 1989 the school went from being independent to being a government institute under the name 'Danmarks Designskole'. In 2010 it was accredited as a higher education institute, meaning that the training at the Danish Design changed status to bachelor's and master's degrees. Since 2011, it has been part of the Royal Danish Academy of Fine Arts Schools of Architecture, Design and Conservation (KADK website). Since 2016, KADK has focused on The United Nations Sustainable Development Goals (SDGs) as part of its strategy. It therefore made sense to collaborate around the theme of Sustainability in the school.

Creating the partnership

Entering a large organization as an individual with no prior internal connections proved to be a significant challenge and required much persistence. Success was finally achieved by the beginning of February 2020. The main partners in KADK were Martin Sønderlev Christensen, Head of The Institute of Visual Design, and Tine Kjølsen, Head of The bachelor program in Visual Design. Both Sønderlev Christensen and Kjølsen are highly experienced professionals who are well familiar with the system. To involve them as much as possible and make the best of their expertise, as well as to fulfil their needs, the author accepted their kind suggestion to work from their office. This was a good opportunity to keep in close touch with partners, discuss relevant topics and obtain general suggestions and some ad hoc feedback. The location also enabled spontaneous meetings with students and other staff members that were valuable for exchanging information. Working in the same space helped build trust and good working relationships. Unfortunately, this resource was no longer available once the academy was locked down due to COVID-19 in mid-March 2020.

As part of the goals for this collaboration, Kjølsen mentioned that she would be interested in hearing new ideas for working further with Sustainability, as they are now doing all they can. Sønderlev Christensen asked for an overview of the field to help inform KADK's work, to understand what is happening in other institutions and hear students' perspectives. He was

also interested in *"developing ideas around how to use the 'visual communication weapon' to support Sustainability (other than creating nudging campaigns)"* (Appendix 2).

1.4 Interviews

As a means for gaining knowledge about the current situation at KADK in general and at the Visual Design program in particular, interviews were conducted with both staff members and students. In addition, interviews were conducted with experts from other academic institutions and from industry. The insights from these interviews are of key importance in shaping this thesis, and will be presented in depth in Chapter 4.

1.5 Project planning

The following Figure, created at the beginning of the process, gives an overview of the project timeline:

Figure 1: Timeline – the Project plan

1.6 Reading guide for this thesis

Following this Introduction, the structure of the thesis is as follows:

Chapter 2. The Context

This chapter lays the theoretical foundations for the thesis, Including both syntagmatic and paradigmatic perspectives. The syntagmatic perspective sets the scope of this research as dealing with changes in the paradigm of Design which occurred during the past century. The paradigmatic perspective refers to the way the field of Sustainability is addressed within the field of Design in general and within the field of Design Education in particular. Then, the specific study case of this research is presented.

Chapter 3. Methodology

This chapter presents the Double Diamond methodology which will be used as a framework for the design process, in accordance with its four phases: 'Discover', 'Define', 'Develop' and 'Deliver'. Furthermore, this chapter explores the downsides of this methodology but explains why it was nevertheless still chosen.

Chapter 4. Design Case

This chapter documents and reflects on the design process used to explore the academic research question, by means of the four phases of the Double Diamond approach. During the 'Discover' phase, the interviews with stakeholders and experts will be presented, as well as an overview of the existing study program. In the 'Define' phase, the key insights based on the previous phase will be given, sustainability in KADK will be mapped and a new problem formation will be presented. During the 'Develop' phase, principles and skills to address Sustainability in Visual Design will be defined and brought together into The Onion Model. The prototyping process will be unfolded and lead to further reflection. In the 'Deliver' phase, the findings will be combined into a final concept. Specific briefs, based on the results of the previous phase, will be discussed, as well as further recommendations for future development. The chapter concludes with overall reflections on the process.

Chapter 5. Discussion and Conclusions

This chapter concludes the key findings of this project. It presents the contribution of this work to the field in comparison to the existing literature, discusses the limitations of the project and suggests possible future research following this thesis.

For the sake of clarity, three main colours will be used in this document to indicate different fields:

Figure 2: Colour-coding for this document

CHAPTER 2

THE CONTEXT

The following section will map the project's contextualisation, based on literature as well as on expert interviews. Both sources provided relevant indications for the specific context and case-study discussed in this thesis.

The areas of this research can be framed both from a syntagmatic and a paradigmatic perspective: From a syntagmatic perspective, this relates to the changes in the paradigm of Design over the past century, and their implications on Design Education. From a paradigmatic perspective, this relates to the field of Sustainability within the field of Design. Within the broad field of Design, the direct context is Design Education within the discipline of Visual Design. The concrete study case is the bachelor program in Visual Design at KADK.

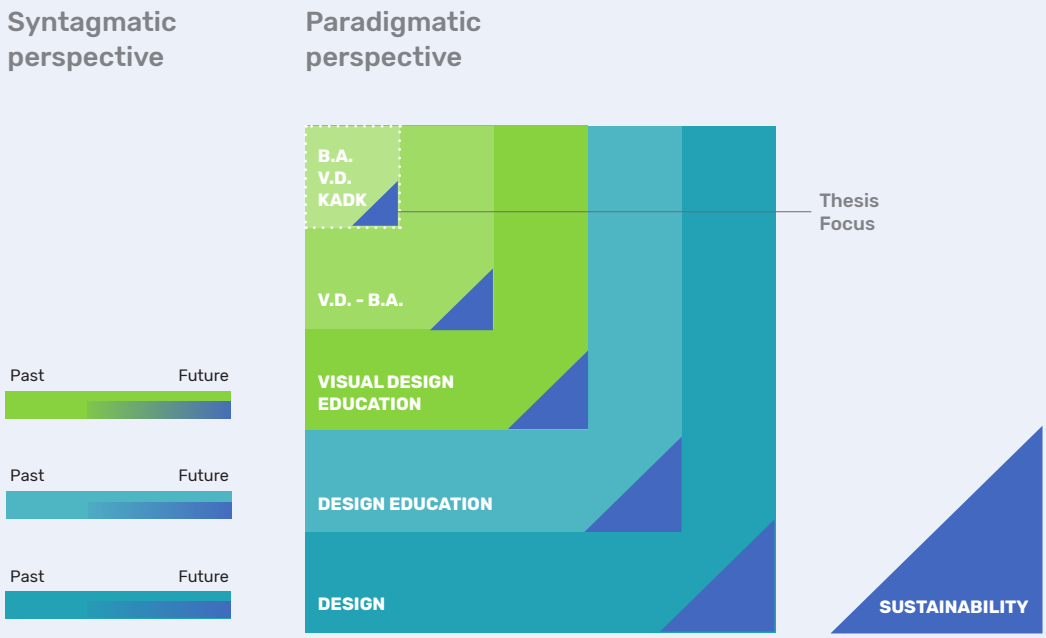


Figure 3: The research areas from both paradigmatic and syntagmatic perspectives

In the interest of providing the reader with the most relevant context, this chapter touches upon both the paradigmatic and the syntagmatic aspects mentioned above. First, the shift in the general paradigm of Design will be presented. Then follows a discussion about the ways these changes affect Design Education. In the next section, the term 'Sustainability' will be explained, and the way it is related to Design Education and more specifically to Visual Design education, will be discussed. The last section will provide an overview on the concrete study case of this research: The Visual Design bachelor program in KADK.

2.1 The broad context: a shift in the paradigm of Design

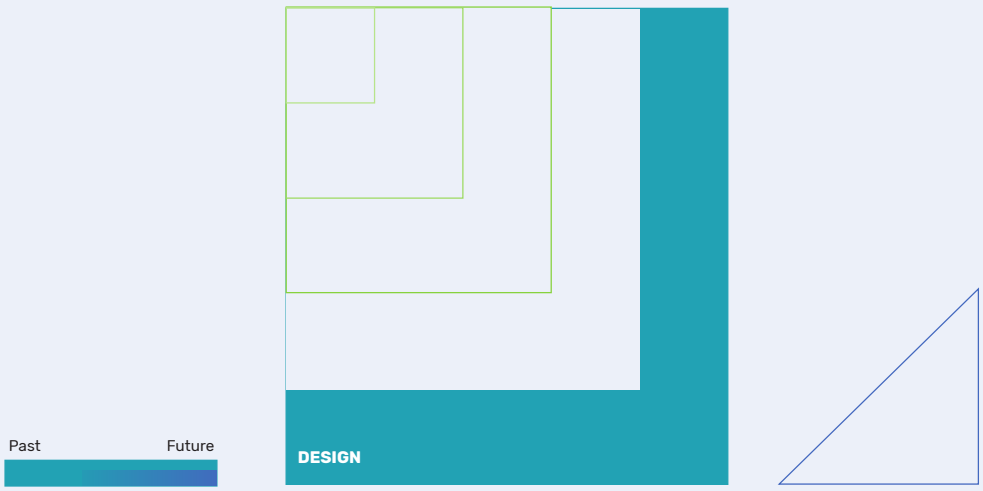


Figure 4: The overall context: a shift in the paradigm of Design

To discuss Design Education in the future, and Sustainability as part of this, there is a need to understand the large shift that has occurred in the field of Design over the past century.

2.1.1. Milestones in Design history over the past century

Rooted in the rich history of western craft, the main characteristic of Design was in creating a physical artefact. As machines began to take over manual labour at the beginning of the 20th century, Design adapted to mass-production and manufacturing and became tightly connected to market demand and consumption. In Visual Design this trend was represented by the rise of corporate identity in the US and Europe during the 1950s, which later evolved into what is now known as branding1. The third industrial revolution, which took place in the 1970s and 1980s, spawned and allowed for the development of Electronics, Information Technology and digital distribution. This had a large impact on Visual Design, mainly by transforming it into a digital field and allowing its outcomes to spread around the world. This trend is constantly growing as digital platforms and distributed production are becoming more and more accessible and affordable and exceeds the original remit of Design, creating a socio-economic shift. This development had set the ground for the fourth industrial revolution, which is currently underway (Collina et. al. 2017) and, due to lack of sufficient historical perspective, is still hard to define. However, it appears that it will have a broad effect in areas such as smart connected

1 Klein (2000) writes: *"The astronomical growth in the wealth and culture of multinational corporations over the last fifteen years can arguably be tracked back to a single, seemingly innocuous idea developed by management theorists in the mid-1980s: that successful corporations must primarily produce brands, as opposed to products".*

machines and the convergence of technologies and will bring about further significant changes in the field of Design.

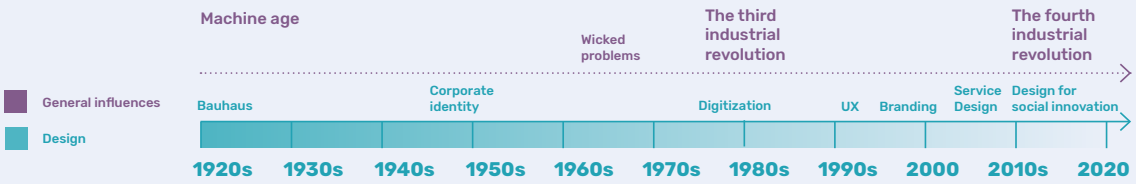


Figure 5: Milestones in the history of Design, emphasizing trends in visual communication

2.1.2 Changes in the paradigm of Design

At the present time, emerging technologies and broad-based innovations are diffusing much faster than in the past (Schwab 2017). Together with this, global challenges, such as those mentioned in the UN Sustainable Development Goals2, threaten the planet. As a result, the paradigm of Design that has an inherent connection to wellbeing, technology and living conditions, has changed dramatically, and the areas tackled by designers have expanded greatly. From a craft-based field focused on physical artefacts, Design is now moving towards incorporating experience, service and strategy, aimed at tackling complex problems in various fields.

The perceived increase in the complexity of Design does not stem only from external factors, such as those mentioned above, but rather *"from an inherent, continuous and critical questioning of what design is and could be"* (Redström 2020). In other words, the scope of Design grew due to a critical examining attitude that did not take anything for granted. It is the increasing ambition and ability within Design that allows us *"to appreciate and address such complexity"*, the same kind of complexity that is known as 'wicked problems'3.

The following Table summarizes the main principles that have changed in the field of Design over the past century. The information is a synthesis of findings from both literature and experts' interviews conducted for this project. The binary definition between past and present aims at highlighting the type of change and drawing the outlines of this specific research. However, it is clear that such a dichotomy does not exist in reality, and changes are more likely to appear on a gradual scale.

2 The 17 Sustainable Development Goals (SDGs) are the core of the 2030 Agenda for Sustainable Development by the United nations, that was adopted by all United Nations member states in 2015 (The UN website).

3 Horst Rittel formulated the theory of wicked problems in the mid-1960s to describe *"that class of problems which are ill formulated, where the information is confusing, where there are many decision makers and clients with conflicting values, and where the ramifications in the whole system are confusing"* (Churchman, 1967).

CATEGORY	PAST	FUTURE
THE DESIGNER		
Professional profile	Designer as a specialist. Focus on artistic skills	'T shaped'[4] skills – designer as a mediator. Focus on communication, synthesis, and interpersonal skills
Work arrangement – professionals	Individual designer/ Small group of designers	Large interdisciplinary group of professionals
Work arrangement – geography	Studio in one location presided by master designer	Distributed international collectives
Relevant experience	Design relied on previous experience and know-how	Previous experience is not enough, due to the unpredictable future. The unstable ground requires a critical perspective
THE MINDSET		
Context	Production	Business
Approach to knowledge	Knowledge building	Knowledge sharing
Correlation to other disciplines	A discipline in itself	A hub for other disciplines
Working hypothesis	Exponential growth	Limited planet
Requirements	Use	Care and maintenance
THE TASK		
Main focus	Making: getting to a final outcome	Planning: the process – how to get to a final outcome and make it possible
The boundaries	Approaching concrete issues: Form follows function	Approaching systemic issues: Form – function – context
Level of complexity	Tackling limited areas (objects). Creating things with just few functions from few materials	Tackling broad areas (systems). Creating multi-functional and complex things
Resources	Making new things	Using limited resources
Outcome	Tangible	Intangible

Figure 6: The shift in the paradigm of Design – a summary

4 According to Tim Brown, CEO of the IDEO Design agency, T-shaped people have two kinds of characteristics, hence the use of the letter "T" to describe them. The vertical stroke of the "T" is a depth of skill that allows them to contribute to the creative process. That can be from any number of different fields: an industrial designer, an architect, a social scientist, a business specialist or a mechanical engineer. The horizontal stroke of the "T" is the disposition for collaboration across disciplines. (Online)

2.2 Design Education

While the overall context of this research is Design in general, the specific case examined here is the field of Design Education, as will be presented below.

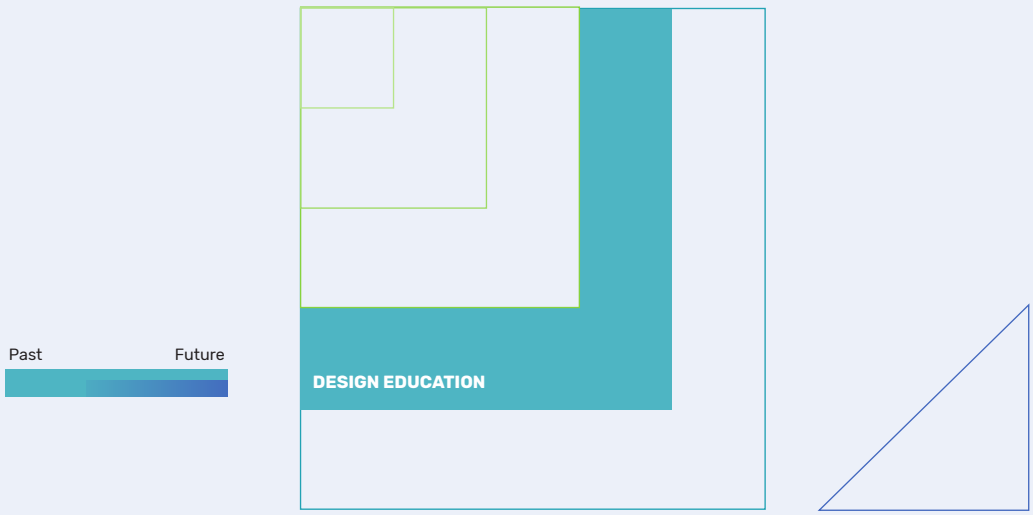


Figure 7: The context: Design Education

2.2.1 The origins of Design Education

The educational model used in the Design field today has its origins in the first industrial revolution. The division of labour and industrial manufacturing made it possible to see Design as a separate activity from production and to have specialist designers (Collina et. al. 2017). The most popular model for teaching Design is the model created 100 years ago in the Staatliche Bauhaus, the Bauhaus School, that was created to reconcile the teaching and practice of Fine Arts with Applied Arts (Design), and took as central to that effort *"the development of a new formal vocabulary based on experimentation and craftsmanship that would do justice to the industrial manufacturing process"* (100 years of Bauhaus, online). Founder and first director Walter Gropius described Bauhaus workshops as intended to be *"laboratories for industry."* As noted by Meyer et. al. (2020), most Design Schools have moved from this strict point of view. However, as mentioned above, it still sets the tone for most of the existing programs.

2.2.2. Adapting to future needs

Designing a study program to meet future demands involves the same complexity as when designing for an unknown future in general. As mentioned by Redström (2020), *"On the one*

hand, we identify which tools, skills, methods, processes and so on we believe a student needs to know to competently enter the design profession. On the other hand, there are also many things we do not know about the future of designing, such as what it will take to thrive in the design profession even as it changes and evolves. There is a difficult trade-off here between honing the skills of contemporary practice and taking the risk of developing competence in areas that may or may not become more important later on."

Despite this uncertainty, there is a consensus among experts that Design Education must go far beyond traditional Design skills (Manzini, 2015), and that students will be expected to engage in deeper strategic and reflective thought processes to address wicked problems. It is generally acknowledged that any advance in Design Education should go beyond the axiom 'Form Follows Function' and actually have a direct impact on the conditions of the world around us (Rodgers et. al. 2013). Therefore, Design-based learning needs to be directly connected to socio-economic activity and engaged with government and organizations to shape new solutions in a rapidly changing world, and practice working with real economic, environmental, social and technical challenges (Scupelli et. al. 2018). Zeenath Hassan, coordinator and teacher in the Design+Change program at Linnaeus University, emphasizes this point: *"We have lines that we draw between theory and practice and formal function. I think we need to move away from that and try to think of them as one. Forget form-function, you need to think form-function-context. Can we think of it as one? The division between theory and practice is seen either as hierarchy or as two different worlds but we know you can produce knowledge in practice as well. So what does this knowledge look like when it's produced in practice, in doing? What forms can it take?"* (Appendix 14). In addition, Hassan points out the need to use a cross-disciplinary approach: *"At some point one of us is entering the classroom and saying: 'I'm here to teach Design but I'm not a designer'. This is an engagement with the field of practice from another discipline. Trans-disciplinary approach rather than cross-disciplinary approach, meaning – you don't take elements from here and there together to see what's happening, but you take a stand on why these two or three disciplines need to be talking with each other. A stand is something we all have something to say about. That's the filter"* (Appendix 14).

Irwin (2015) writes that in order to work with wicked problems, designers must be able first to 'see' them, and then to work effectively within trans-disciplinary teams to solve them. Meyers et. al. (2020) predicts that designers will work mainly as mediators and project leaders, using *"unique, multi-disciplinary skills, understanding how to use the specialized knowledge of all the different disciplines involved in the task in a way that best produces a positive outcome".* Many agree that designers will need a solid, critical understanding of Design methodology rather than proficiency in using a few tools for specific applications (Meyers et. al. 2020). Hassan takes this stand even further through the 'Radical Pedagogy' approach which she adopts in her program: *"I'm sharing my position in my practice and the student is trying to identify his or her own position in the Design landscape. I'm not saying: this is Design, you shall practice this, and you should take Design for what it has always been"* (Appendix 14). The principles of 'Radical Pedagogy', says Hassan, are a dialogical process between the student and the teacher, the collaborative learning dynamics shared by the students and the staff and among the teachers themselves, and the relationships built with society: *"For example: How is society introduced in the classroom in a form of a chair? How is culture in that chair?"* (Appendix 14).

The following Figure summarizes the main changes that Design Education is currently undergoing, based on synthesized information from both literature and experts' interviews conducted for this project:

CATEGORY	PAST	FUTURE
THE EDUCATION PROCESS		
Education boundaries	Working in a 'closed system': focusing on visual semiotics	Relating to social, political, economic and environmental contexts
Location	Design studio	Various spaces, according to the context. Interacting with people wherever they are
Project boundaries	Students working within the limits of a given brief	Students frame the brief themselves according to the topic they want to address
Disciplinary approach	Single discipline	Trans-disciplinary
Learning	Derived by the teacher	Derived by the group
Drive	Job market	Societal change
Program structure	Theory and practice apart	Theory involved in practice
Knowledge production	Intellectual	Intellectual and practice-based
THE TEACHER		
Status	Authority and source of knowledge and judgement	Non-hierarchical pedagogy
Proficiency	Designer	Various fields
THE STUDENT		
Pre-education	Students have previous craft knowledge	Students have previous technological knowledge
The 'ideal' student	'Design genius'	Team player

Figure 8: Significant changes in Design Education – a summary

While the large majority of Design Education programs are still based on traditional Design Education and are struggling to keep up with rapid changes in the paradigm of Design (Meyer et. al. 2020), several new programs, launched over the past decade, focus on meeting the emerging needs. Among those programs are 'Design for Planet', a two-year Master's degree program at Design School Kolding, Denmark; 'Design+Change', a three-year Bachelor's degree program at Linnaeus University, Sweden; 'Transition Design', a Master's degree and Doctoral program at Carnegie Mellon University, USA; 'Sustainable Design', a two-year Master's degree program at Aalborg University, Denmark; 'Nature–Culture–Sustainability Studies, a Master's degree program that focuses on interdisciplinary environmental studies at Rhode Island School

of Design, USA; and 'Sustainability and Eco-Design', a two-year Master's degree program at the Technical University of Denmark (DTU). These programs challenge the traditional approach towards Design in general and Design Education in particular in many ways.

Several representatives of these programs were interviewed as part of this research. The institutions they represent appear in the following timeline (Figure 9), to highlight their perception of Design Education in relation to their history, year of establishment, and the norms and conventions they face.

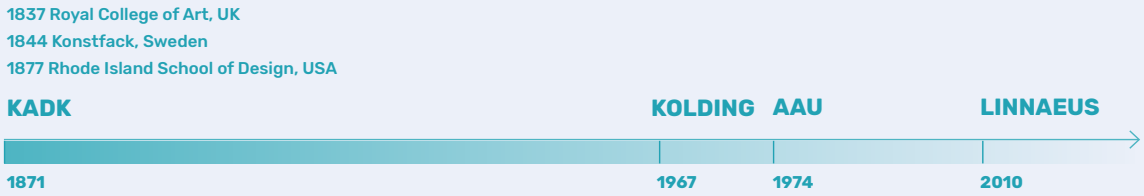


Figure 9: Date of establishment of Design School programs

2.2.3 Challenges and constraints

Design institutions that follow a curriculum that was developed over the years and which has survived until now need to find a balance between their own tradition and future demands. Traditions carry a great value, as can be seen in the interview with Martin Sønderlev Christensen, Head of the Institute of Visual Design: *"The most important thing for Visual Design is to understand the visual impact and toolset to actually make people's life better, whether it's wayfinding, reading or understanding context that delivers information to people, and to use the sort of aesthetical toolbox that our strong heritage comes with"* (Appendix 4). However, at the same time, a school's tradition can delay further change. Sønderlev Christensen himself expressed his concern that KADK will turn into 'Kodak' – meaning that it will lose its relevancy if it is unable to adapt to the changing reality.

From a systemic perspective, developing a new approach in an old context is a complicated task. Ulla Ræbild is Program Manager at 'Design for Planet' at Design School Kolding. Her perspective regarding working with an existing business model also appears to be relevant for Design Schools working with an existing curriculum: *"It is very difficult to move because it already exists and has already been born with a different type of business model, and now they have to try and see if they can change something, and that's a lot harder than working on new concepts"* (Appendix 15). Changing the intellectual climate appears to be necessary to execute radical changes. Aggebo is aware of this constraint: *"We have environments that say we need to do it like that because it's how we have been always been doing it"* (Appendix 3). Tine Kjølsen, Head of the bachelor program in Visual Design, points out that the system lacks agility, and that driving change is extremely difficult and requires overall structural change (Appendix 5).

It appears that the challenge – how to shift from the traditional paradigm to a new one – is not only systemic, but also very much dependent on the background and mindset of the stakeholders, as noted by Aggebo: *"We have great teachers that have been here for many years and have a more traditional approach to Design, and we have new people coming in, so it is the balance between the great skills and experience from the old teachers and the new agenda – opening up new doors and discussions, so of course we also have this discussion with the staff, and that is of course confusing us and also the students"* (Appendix 3). Hassan describes a similar challenge: *"Staff that has been teaching what you could call 'traditional Design skills' needed competence development. We needed to be able to work together, so there was also a lot of work on group dynamics and what new practices brought in. We need to learn from each other"* (Appendix 14). Among the stakeholders are students who have preconceptions regarding what Design is and what should be taught in Design Schools. These are often students who have a rather conservative approach and find it difficult to adapt to a more radical perspective. Hassan notes: *"There was always this conflict between the students' idea of what a traditional Design education offers. They really expected to be ready for the job market at the end... They say: 'I thought I'm going to design chairs, why am I not designing chairs? Why aren't you teaching me about ergonomics and user studies?' Then we nudge them to think in what kind of a world does this practice exist. Where does it exist in their own world? What kind of world is this practice serving? Do you identify yourself in that world? Who is sitting on the chair? What is the space this chair occupies? What [role] is the chair performing?"* (Appendix 14). Sønderlev Christensen relates to students' ambitions: *"I don't think that many students come here and think that they are going to work with data visualization, they probably have more a dream to become graphic designers that do fonts and put up great posters"* (Appendix 4). The interviews show clearly that the ability to drive and apply changes depends on the involvement of stakeholders at all levels.

The complexity of accommodating tradition and future demands sets up the constraints for this project. As mentioned by Irwin (2015), *"there is always the danger of throwing the baby out with the bathwater"* by leaving behind historic roots. Therefore, the strengths and fundamentals of the traditional education should be preserved.

2.3 Sustainability

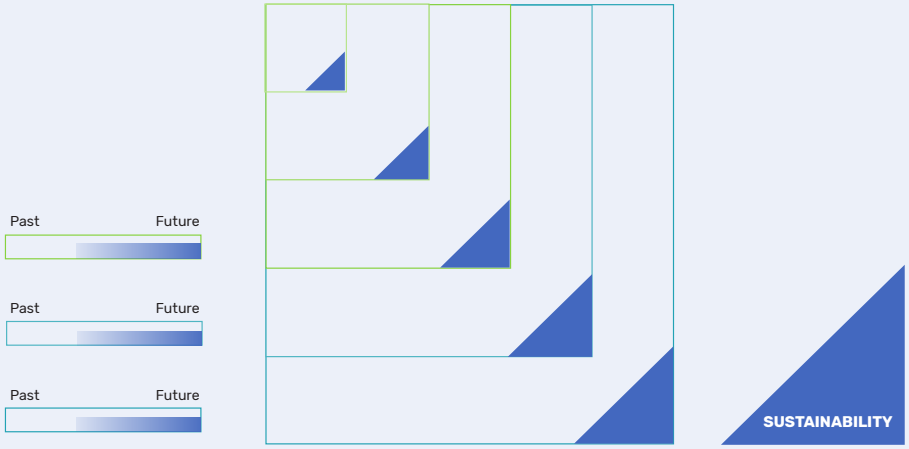


Figure 10: The context: Sustainability

There are several definitions of Sustainability, making it difficult to find unity (Egenhoefer 2018). However, the most frequently quoted definition is from the 'Report of the World Commission on Environment and Development: Our Common Future', also known as the 'Brundtland Report' (1987):

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The term 'Sustainability' was first used in a United Nations document in 1978, but it entered into common use only during the 1990s. Concern for the environment, however, already emerged in the 1960s (Akama et. al. 2014). Over the past 30 years the discourse on Sustainability has speeded up and entered the mainstream. As mentioned by Ceschin et. al. (2018) it has now *"reached a point where the present common view is that there is a need for radical transformational change in how human society operates. This view emerged as a result of studies pointing out the fast declining of terrestrial and aquatic ecosystems with implications on biodiversity, as well as the urgent action needed to mitigate and adapt to climate change."*

In 2015, all UN member states adopted the 17 Sustainable Development Goals (generally known as SDGs) as part of the 2030 Agenda for Sustainable Development to *"end poverty, protect the planet and improve the lives and prospects of everyone, everywhere"* (UN, 2015). This framework was adopted by many organizations, including KADK.

2.3.1 Sustainability in Design

Sustainability is gradually establishing its place in the Design industry as an essential framework that requires a cross-disciplinary approach, as evidenced in the words of Tina Slåttedal Jacobsen, Head of Sustainability in Designit, a leading Oslo design firm: *"In the last two years we had an enhanced focus on Sustainability, so we are trying to build competence but also to look at our projects – how can we implement more sustainable principles so every project that we do with our clients is more in-line with the Sustainability principles that we have"* (Appendix 16). Slåttedal Jacobsen emphasizes that this focus is not a local initiative of a few like-minded people in the firm but rather a top-down decision that involves everyone in the company, including the CEO and the general manager. She further says: *"The more we focus on it in our daily life and learn it in our professional lives it becomes more internalized and becomes a default way of thinking... a continuous focus on [Sustainability] will build momentum on those aspects; to maintain it is super important, because now we try to build a platform – our knowledge, but also competences on what we can offer within this field". "We try to build it into our company's culture"* (Appendix 16). Designit is a leading actor in the field of Design. It is therefore reasonable to assume that the trends which are described by Slåttedal Jacobsen will soon become a standard in the Design consultancy sector, as well as in other companies who work with Design. In recent years Sustainability as a framework went beyond the field 'Design for Sustainability', while experts agree that it is extremely complicated and cannot be reduced into a tight frame: *"It's across the entire value chain",* says Else Skjold who is in charge of the 'Sustainability Module' in the School of Design, KADK, *"It's not only about materials, it's about creating better links between consumption and production. It's about making sure there is only a minimum amount of over-production that becomes waste, it's about sending waste back into the product flow and how can you do that while actually contributing to the environment, and not just greenwashing"* (Appendix 7).

Working within a complicated context requires various competences and skills. These will be introduced and discussed in Chapter 4.

2.3.2 Sustainability in Design Education

As discussed in the previous section, addressing Sustainability in Design is a growing and essential trend. *"With global employers and world leaders identifying sustainable development as among the most important issues of the future, socio-environmental topics will continue to impact designers' personal and professional lives"* (Emans et. al. 2018). Failing to understand *"what this implies for design and how we educate designers is critical, as failing to do so very likely will result in education even further reinforcing ways of living, doing, and thinking that we now know cannot be sustained"* (Redström 2020). Design Schools have no other choice but to address Sustainability

as part of the emerging changes within the field.[5]

However, the features of Sustainability and the mindset it requires make it mainly relevant within the context of the new paradigm of Design. Design Schools that are based in tradition, such as KADK, will potentially face a bigger challenge in addressing such a paradigm shift (Figure 11).

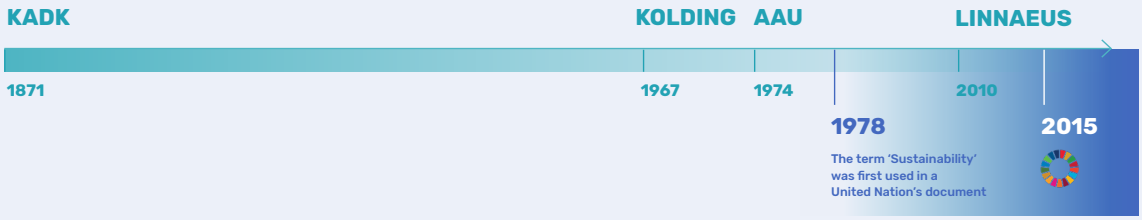


Figure 11: Sustainability in a synchronic context

The realization that working within the context of traditional Design Education requires a different approach than working within a radical education context sets the scope for the design brief:

How to address Sustainability in traditional Design Education?

Sønderlev Christensen relates to this point by saying: *"One of the challenges is to move our very strong and proud tradition of Design into a world where we need less Design, or where Design needs another role"* (Appendix 4). Micklethwaite et. al. (2017) are also pointing towards the need to 'do less' by saying that art schools should focus on teaching where *"the possibilities of not doing, not making, not bringing into being [are] at the very centre of acts of thinking, making and doing"*. Thackara (2005) advocates a *"less stuff, more people"* mode of designing. Micklethwaite et. al. (2017) interpret this as *"downplaying the traditional role of physical making in design practice in favour of an approach to innovation which is more social in its means and ends."* They express the idea that *"such immaterialised creative response is key to design teaching which is relevant for a new reality"*.

Given the inherent complexity of Sustainability, there is no single approach that can be used to address it. Each school and program select what fits best their own needs and agendas. As noted by Ræbild: *"You can work from a product level up into a political or societal level. For us, all levels are relevant because the challenges need to be addressed in different levels"*. In general, Ræbild points out

5 The motivation to address Sustainability within the education system could vary from program to program. While Linnaeus University follows the Swedish government's guidelines, Aalborg University received this as a demand from the students, as mentioned by Christian Tollestrup, Head of the Industrial Design section at Aalborg University: *"It is not necessarily something that we want, this is actually something that students are asking for. We can't ignore it. It's not that we are not wanting to do it, but students are asking so how do we deal with that? And it's extremely tricky to handle that in product / industrial design. So, I'm not sure we are looking for one way of doing it, we aren't, but I'm pretty sure we are looking for inviting the discussion of the sustainable aspect"* (Appendix 17). Kjølsen also shares the belief that a future change in the approach to Sustainability in the school will come from the students: *"If it comes, it will come bottom-up and it will come from the students that will demand it, because it doesn't really work when I or somebody else talks about it"* (Appendix 5).

two incorrect beliefs that need to be changed, namely *"the general perception of Sustainability as something that has to do with materials only (because it's not) and the idea that this is something we need to arrive at and then we are finished"* (Appendix 15).

Another challenging matter when addressing Sustainability in Design Education is the changing role of the designer: *"Designers 'were born' to make products so nice that we want to buy them, to push consumption, and if that's not our role any more, what is it then? It has to be reconfigured completely. You have to use the aesthetic competences for something meaningful... at least so that people are aware of what they are doing and make a conscious choice"*says Ræbild (Appendix 15). This goes hand in hand with the observation that *"there is still a prominence of aesthetic, functional, ergonomic and product-based factors in the design process"* (Ramirez 2006). In this regard, Sustainability appears as yet another requirement that designers must take into account when developing products, rather than a main principle guiding the design practice. However, these aesthetic capabilities could also be seen as an advantage, as mentioned by Skjold: *"we can talk about circular business models and upcycling and things from here to the moon and that will never happen unless you have designers that can make it attractive enough so that anybody wants to wear it, for example"* (Appendix 7).

More specific competences and skills that can serve as guidelines for Sustainability in Design Education will be introduced and discussed in Chapter 4.

2.3.3 Sustainability in Visual Design Education

As mentioned earlier, most of the research in the field of Design and Sustainability relates to Design disciplines that have tangible outcomes, such as Industrial Design, Fashion Design and Textile Design. It is relatively easy to understand the impact these areas have on Sustainability, since *"80% of the environmental impact of the products, services and infrastructures around us is determined at the design stage"* (Thackara 2005). At the same time, a growing part of Visual Design outcomes are becoming digital. The lack of tangible objects makes the correlation between Visual Design and Sustainability even less visible, as mentioned by a second-year student: *"I could be a Web Designer and I'm only using electricity"* (Appendix 9) as well as by Kjølsen: *"It is difficult to address Sustainability here because we don't have any polluting output. There is not a great deal of materials in the Graphic Design or Game Design field"* (Appendix 5). This is probably why Visual Design is not gaining much attention when it comes to Sustainability in Design. Another example is IDEO's Guide for Circular Design (online). The guide, created by IDEO, a leading design firm, presents different work tools within the context of Sustainability in Design. The only way it relates to the contribution of Visual Design to Sustainability is through branding. A similar sentiment can be found in the interview with Slåttedal Jacobsen. As an answer to the question 'How do you use Visual Design in the context of Sustainability in Designit?' she focusses on branding and communication: *"As a Visual Designer I'm assuming you will collaborate on a brand strategy and general strategy of the product or the company... In my experience we normally do Visual Design as part of a bigger design project and there is a lot of impact you can make by building sustainable brands about how you communicate... there is a huge impact communicating the Sustainability mission through your*

brand, but also how you reach people with this message because there is a lot of shaming in Sustainability nowadays, so we, as a company, are trying to put more focus towards a positive message" (Appendix 16). A second-year Visual Design student shares the same perspective: *"A good way (to address Sustainability) will be to do sustainable campaigns and stuff, how can you create something that will open people's minds: an interesting website or a magazine, like choose this paper instead of that – I think that this is the level it should be on"* (Appendix 9).

Even though Sustainability in Visual Design is tackled by the traditional areas mentioned above, the literature suggests further ways in which it could be addressed within the context of this field. Chapter 4 will present some of these.

2.4 Design Education in KADK

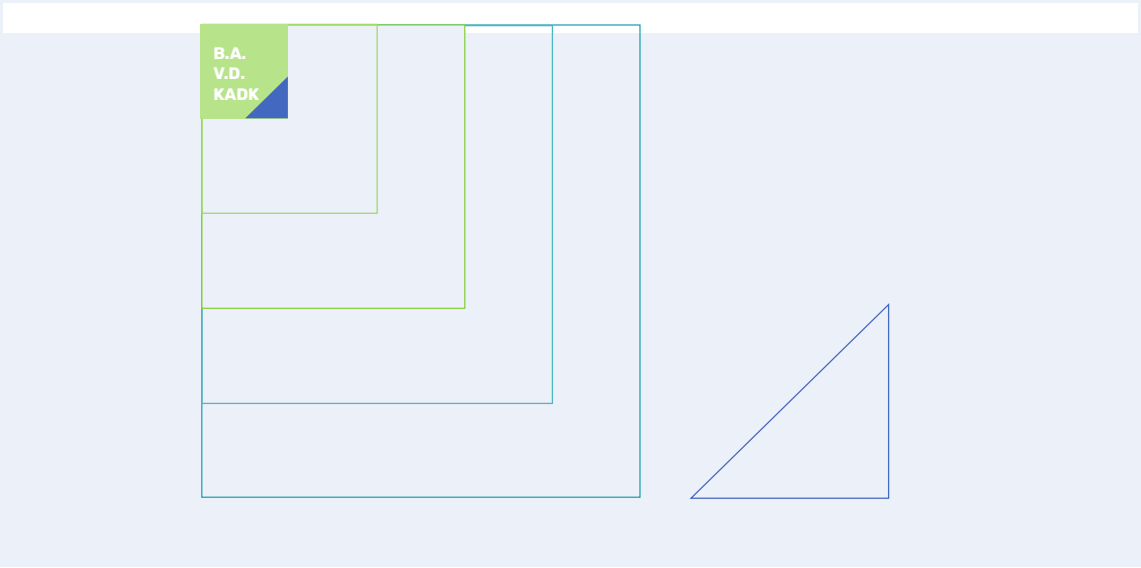


Figure 12: Focus area: The bachelor's degree in Visual Design at KADK

This section will describe the Visual Design bachelor's degree program in KADK, which includes two tracks: Visual Communication, and Game and Interaction Design. The information in this section is mostly based on an internal overview of the program (Appendix 18). However, to better understand what lies behind the written information, the following stakeholders were interviewed: Tine Kjølsen, Head of the bachelor's degree program in Visual Design and Visual communication track (Appendix 5), Alessandro Canossa, Head of the Game and Interaction Design track (Appendix 6), and two first- and second-year students from each track (Appendices 8-11). Further contextualization was achieved by interviewing two more students at a later stage of the project (Appendix 12, 13).

A special part of each interview was dedicated to Sustainability in the Visual Design bachelor's degree program. Chapter 4 elaborates on that further.

2.4.1 The framework

KADK's website provides an overview of the practice and the agenda of the Visual Design bachelor's degree program: *"We educate designers who are not only skilled crafts-persons, but who can also actively help to shape the profession and leave their mark on the world. Students learn to create new approaches and expressions by communicating in visual and graphic terms, basing their work on an in-depth understanding of artistic and aesthetic techniques, and design methods and history. In the undergraduate Visual Design programme we apply* ***basic, classic design skills and methods*** *to create graphic, visual and interactive products and productions. Students work intensively on* ***innovative design solutions in the fields of print, game, digital, interaction and experience design"*** (highlights made by the author).

In general, the three years study program (represented by ) of the Visual Design bachelor's degree includes two types of classes: **Toolkit classes** (in red) and **Thematic classes** (in purple). The first group includes professional practices such as type design, photography, colour, and programing, which are traditionally used in Visual Design to give form to content. The skills being taught under this category can generally be applied to any kind of content. In these kinds of classes, Sustainability can be approached through choosing a Sustainability-related problem as a brief (see an example in Chapter 4).

The second group of classes is thematic. The classes which are part of this group are mostly taught as 'common modules' for Visual Design, Industrial Design and Fashion Design students. They include areas of studies such as 'Sustainability and Ethics', 'Design History and Theory' and 'Storytelling and Narrative' that are not tied into a specific practice and are ethical and political in their nature. They therefore have the potential to shed new light on Visual Design practices and help redefine them. These classes offer an opportunity to broaden the scope of the discipline, to address Sustainability, along with other wicked problems (a concrete example of how to do this can be found on Chapter 4).

2.4.2 The program 

This section presents the program's courses according to semester. Courses that could be more relevant for the context of Sustainability are highlighted in red /purple, according to the group to which they belong (Toolkit / Thematic). This aspect will be further developed in Chapter 4.

First year:

During the first and second semesters, the emphasis is on teaching the Design toolbox, using analogue and digital techniques, both on a meta- and a concrete level. The studies comprise a series of small workshops in digital and analogue media followed by a short 3-4 week long project, in which the students showcase the tools they have been taught. The first semester makes use primarily of analogue tools, while the second is more digital in content.

1st Semester 

The main purpose of the module is to impart basic knowledge to the students and provide them with the opportunity to practice basic disciplines within this field of study.

Joint courses for both tracks include: Basic Typography, Building a Digital Portfolio, Academic-Oriented Study Tour, and Visualization. | **A Shared module for the Design school:** "Design History and Aesthetic Theory" which includes skills courses, theory courses, lectures and workshops. Focus on the development of basic skills in 2D and 3D graphics for games, and basic skills in Interaction Design. | **Smaller projects include:** Book and Publications Design, read-ins, lectures, essay-writing, and company visits. | **Deliverables:** Sketches and solutions for the sub-tasks, reflection on a given font in the form of an essay, assignment for the study trip, and selected work in a digital portfolio. | **Main courses – Visual Communication:** Calligraphy, Glyphs, Design History and Aesthetic Theory, Poster History, Layout, Pictograms, Study Guide, Visual Identity History, Book Design (Handbook Binder, Paper), Signs & Prints, Typographic Setup, Font Design, Colour, and Paper. | **Main courses – Game and Interaction Design:** Design History and Aesthetic Theory, From Paper Prototype to Digital Wireframe, Game Jam, Unity, Game History, Visualization, Narrative & Storytelling, 2D Animation, 3D Animation, Layout and Typography, Character & Print, Typographic Setup, In-Game: From Immersion to Incorporation, Game Design Workshop, Half Real, and Rules of Play – Game Design.

2nd Semester 

Joint courses for both tracks: Visualization – to practice and enhance the student's ability to articulate and shape observations and ideas visually. Including drawing and illustrating in many different ways, analogously and digitally | UI/UX – App Design and other digital formats | Project Jam – develop design solutions over a week | **A Shared module for the Design school:** Design and Society | **Specific content – Visual Communication:** Visual Narratives – practicing and strengthening the skills in working with analogue and digital media, including Graphic Design, setup, narration and programming / prototyping of digital experiences. Throughout the module, the ability to develop narratives, including the purpose behind telling them, is clearly and visually articulated through various media. This is true both in the form of illustrations and through, for example, data visualization and lettering. | **Specific content – Game and Interaction Design:** Small game prototypes that will be developed into a full game, with a consistent visual

universe, and with the development of the game's basic mechanics, Environment Design, Game tests, Theory of computer games from a sociological angle, Contemporary genres and trends in gaming | **Scope:** Teaching, project introduction, lectures, group and individual guidance, Project Jam, workshops and lectures. | **Deliverables:** Project + project report, Visual Communication: syllabus bound in the subjects: Communication / Narration / Programing, Game and Interaction Design: syllabus bound in the subjects: Games Test / Programming / Design of game courses, with the development of core mechanics / Computer games from a sociological perspective / Visual design of characters and environments. | **Other courses:** Digital Illustration, Infographics, Code / Lettering and Variable Font, Tooling, Live Images, Animation, Programing and Game Design.

Second year:

The primary pedagogical content in the 3rd and 4th semesters is working with real problems, people and contexts.

3rd Semester

During the 3rd semester the students collaborated with the Oncology Department at Rigs Hospital. The students worked in groups to practice collaboration.

Semester's project: Design for People, Design with a Purpose – emphasis on collaboration.| **Framework:** Design and Sustainability | **Collaborator:** Rigshospitalet's Oncology Department. Topics included: Design Methods, UI/UX. | **A Shared module for the Design school:** Design and Sustainability | **Specific content – Visual Communication:** Font Design and Production, Coding and Prototyping. | **Specific content – Game and Interaction Design:** User-Oriented Game Development, Game Development Process | **Scope:** Teaching with guidance. The module contains project introduction, follow-up and fieldwork in collaboration with RH, lectures, course modules, as well as intermediate review and project presentation. | **Deliverables:** Project report (including project program). Ongoing submission of sub-assignments prototypes, visualizations, process material and fully developed design project. Study trip assignment, selected work in a digital portfolio. | **Additional Courses:** All classes / workshops / activities are part of the overall project with the hospital: Generative Research Methods, Type Design: Introduction. Type as System, Game Jam Across the Years, Type Design GLYPHS independently, Live Action Roleplay / Participatory / Usability / Playtesting / Guidance, Type of Design: Type and character, UX / Tutorial, Design Type: Readability, SI: Tutorial, SI: UNITY Support, Tutorial, Design Type: Behaviour and Features, presentation, dissemination, pitch, exam guidance, Final presentation of design proposals to Rigshospitalet.

4th Semester

During the 4th semester, the students collaborate with the Tøndermarsk Initiative on the development of concepts of wayfinding for the city and its surroundings. The focus is on

storytelling, narratives, Exhibition Design, Interface Design, augmented reality and games to enhance the experience of the visit. The students work individually in preparation for their graduation project.

Shared module: Design-by-Method: Design as research, Design as experiments and Design as proposals. | **Joint courses for both tracks:** Project Jam with App Design and UI/UX, Cinema4D. | **Scope:** Teaching, supervision, fieldwork in Tønder, lectures and company visits. | **Deliverables:** Design project, project report integrated with the written theory assignment including references to Design roles and Design methods course. | **Classes:** Research Methods, Drawing (teaching and guidance), Meeting with TMI, UI/UX, Drawing Teaching Spatial Sketching, Program Theory, Cinema4D, company visits, TEC Sign, visits to Søborg. | **Theory:** Students are introduced to basic theory within the program and their field of study is linked to the program modules scheduled for the semester. | **Special Content – Visual Communication**: Overview of various Design methods, Design roles and Design approaches. | **Special Content – Game and Interaction Design:** Theories of Computer Games. | **Scope:** The module is organized in such a way that in the introductory part it focuses on general theory formation related to Visual Design, methods and design considerations. In the second phase of the module, lectures as well as guidance are closely linked to the project and report and are largely integrated with the parallel project module. The module consists of a number of common lectures and two parts of study-specific courses.

Third year:

5th Semester

The 5th semester focuses on an individual projects. The students choose their project depending on their personal interests. In addition, the module contains lectures regarding various cases, forming the basis for reflections regarding internship during the following semester, as well as professional presentations and assignments related to portfolio, pitch and industry understanding. The semester also includes career and internship interviews.

Requirements for deliveries: Pitch with professional presentation / product preparation and industry analysis. | **Courses:** Professionalization and Portfolio, Strategic Design and Business Collaboration. | **The bachelor's degree project – Visual Communication:** Must demonstrate that the student, by applying Design theory, methods and skills, can solve basic design academic problems on a professional level. | **Scope:** Introductory workshop, joint review, mid-term review and individual student guidance on their projects. | **Deliverables:** Project report and fully developed Design project.

6th Semester

Internship.

CHAPTER 3:

METHODOLOGY

This chapter presents the Double Diamond model which was used as a methodological framework for the design process, in accordance with its four phases: 'Discover', 'Define', 'Develop' and 'Deliver'. Furthermore, this chapter explores the downsides of this methodology but explains why it was nevertheless chosen.

3.1 The Design process

The Double Diamond model was developed in 2005 by the British Design Council (Design Council, 2007). The shape of the diamond presents the two divergent and convergent ways of thinking throughout different stages of a Design project, which are divided into the four phases: 'Discover', 'Define', 'Develop' and 'Deliver' (Figure 13).

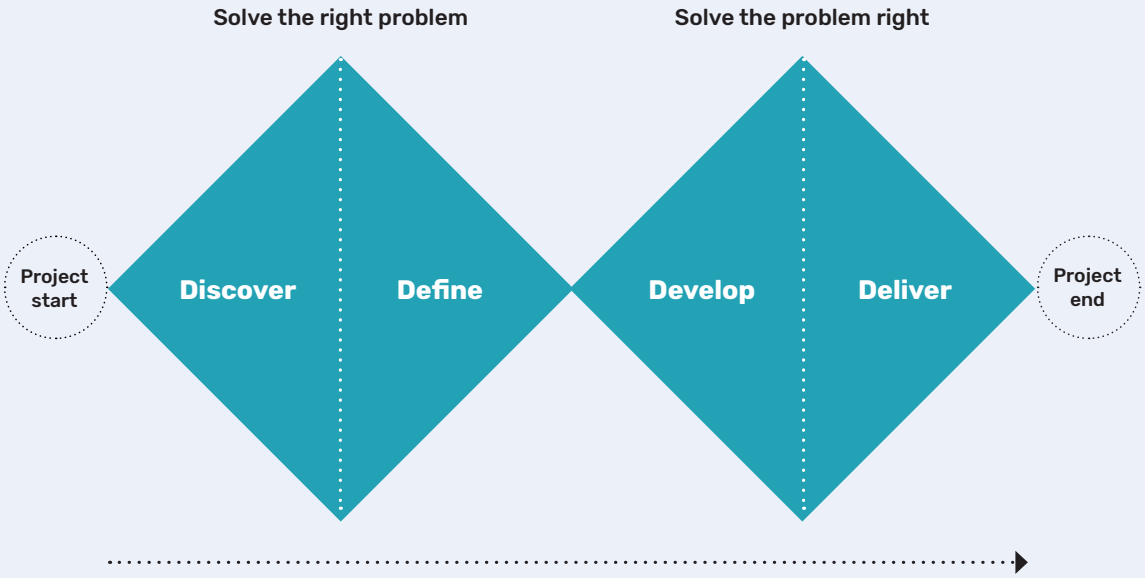


Figure 13: The Double Diamond
(the elements with the dashed line were added by the author to clarify the model).

During the 'Discover' phase, the main objectives are to gather insights, explore a broad range of possibilities regarding the initial theme, and gain a deeper understanding of the people involved. In the 'Define' phase, the goal is to construct a clear brief in which the scope of the design challenge is more concrete and focused. The findings and insights identified in the 'Discover' phase are analysed and synthesized using convergent modes of thought. In the 'Develop' phase, the aim is to develop solutions for the problem addressed in the previous phase. This is generally an iterative process which includes ideation, prototyping and testing. The 'Deliver' phase is where convergent thinking is used to finalize the service concept and deliver it to the client.

3.2 Reflection

The Double Diamond model is often used as a methodology in design projects. It is a simple, visual and structured way of constructing the whole design process, and its use helps plan the design activities in each phase at the beginning of the project. In addition, the model is well-

known in the design field, thus its use helps reduce barriers when communicating with the various stakeholders.

Having said that, the model's logic is based on several assumptions that should be questioned:

- Linearity: The Double Diamond is a linear model. As such, it is based on the assumption that the design process follows a constant one-way 'progression' from the beginning of the work up to its successful end. Thus, it does not take into consideration iterations (Macmillan et. al. 2002), crossroads that require new directions, and 'dead ends'. In that sense, The Double Diamond reflects the idea of 'progress' and reveals how deeply this is embedded in the practice of Design.

- The existence of a 'client': The 'Deliver' phase is based on the assumption that there are two sides to the project: the sender and the receiver, the designer and the client. This assumption does not correlate with the contemporary approach to Co-Design, where all stakeholders are considered to be partners in the project.

- A closed system: The Double Diamond is a closed system. The lack of context implies a perception of the design process as isolated from the outside world. The model functions like a capsule of professional practice. Thus, it stays within the semiotics of Design rather than embracing the complexity of the outside world.

- Understanding: Understanding the problem has a significant role in this model, and basically occupies the first diamond, known as 'the problem space' (Stickdorn et. al. 2018). However, it is well argued that understanding is not linear and is actually necessarily based on previous understanding, a process known as the 'hermeneutic circle'[6]. This iterative movement finds no expression in the linear model of the Double Diamond.

3.3 The academic research process

Despite the above comments, the academic research process used in this work will be presented based on the Double Diamond model, including its four phases. This will be done for the sake of clarity and ease of communication, both with the stakeholders and the readers of this thesis. Implementing this research process in this work, allows two project outcomes to be developed: one for KADK and one for Design academia in general. The design process for KADK will be used as a means to explore the academic research question, and will be discussed in the next chapter.

6 As argued by Schleiermacher in 1829: *"the same way that the whole is, of course, understood in reference to the individual, so too, the individual can only be understood in reference to the whole"* (Stanford Encyclopaedia of Philosophy, 2016). Such a process necessarily requires an iterative process, and is therefore known as a circle.

CHAPTER 4:

DESIGN CASE

This chapter documents the design process, which is used to explore the academic research question, and reflects upon it. During the 'Discover' phase desktop research was conducted to gain theoretical knowledge regarding the subject matter pertinent to this project, and interviews with stakeholders and experts were conducted to engage them in the process and gain a better understanding of how the theoretical ideas are met in real life. In the 'Define' phase, the research findings were used to converge towards a specific focus area and define the problem to be solved. During the 'Develop' phase, a theoretical model with applicable principles, to be used in the bachelor degree program, was developed, tested and discussed with the stakeholders. In the 'Deliver' phase, the findings of this research were combined into a final concept. Here, the concept is communicated to the stakeholders at KADK by means of a final report.

As the Double Diamond consists of four phases, this chapter consists of four corresponding sub-chapters, and a section reflecting on the whole process: 4.1 Discover / 4.2 Define / 4.3 Develop / 4.4 Deliver / 4.5 Reflection on the design proces

4.1 Discover

The 'Discover' phase of the Double Diamond model sets the ground for this academic research by both collecting knowledge and building relationships with the stakeholders. The ways that Sustainability is currently being addressed in the bachelor's degree of Visual Design in KADK, as well as in some other academic programs, were explored through interviews with students and staff members, who were defined as the stakeholders in this project. Concurrently, a more holistic understanding of the field was generated by conducting a desktop research concerning existing possibilities and approaches in the field. These actions could be seen as the preparatory step prior to framing and defining a clearer focus area in the following 'Define' phase.

4.1.1 Kick-off meeting

Collaboration with KADK began officially with a kick-off meeting at the beginning of February 2020. The participants included Martin Sønderlev Christensen, head of the Institute of Visual Design, Tine Kjølsen, Head of the bachelor's program in Visual Design, and Anna Bascuñan Skaarup, a doctoral student in the Institute of Visual Design. The purpose of this meeting was to present the overall plan and research areas to the stakeholders and receive their feedback, set the time frame and align expectations (Appendix 1).

4.1.2 Interviews

To better understand the context of this research, gain subjective perspectives from the various stakeholders and engage them with the process, thirteen in-depth interviews were planned according to two main categories: interviews with stakeholders, and with experts.

KADK

- First-year Game Design student
- First-year Visual Design student
- Second-year Game Design student
- Second-year Visual Design students
- **Mathilde Aggebo**
  Head of School of Design
- **Martin Sønderlev Christensen**
  Head of the Institute of Visual Design
- **Tine Kjølsen**
  Head of the Visual Design bachelor program
- **Alessandro Canossa**
  Head of the Game Design track
- **Else Skjold**
  Responsible on the Design and Sustainability module

OTHER INSTITUTIONS

- **Christian Tollestrup**
  Head of the Industrial Design Section, AAU
- **Tina Slåttedal Jacobsen**
  Sustainability Lead, Designit Oslo, Norway
- **Ulla Ræbild**
  Program Manager, Design for Planet,
  Design School Kolding
- **Zeenath Hasan**
  Program Coordinator, Design+Change,
  Linnaeus University, Sweden

Figure 14: Interviews in the 'Develop' phase

'In-depth' interviews are a qualitative research technique used when conducting intensive individual interviews. These are often conducted to understand different perspectives on a specific subject to learn about expectations, experience and concerns, and also about needs, ideas or environments (Stickdorn et. al. 2018).

Stakeholders' interviews

The term 'stakeholder' has various definitions: according to Cambridge Dictionary a stakeholder is *"a person ... who is involved with an organization, society etc., and therefore has responsibilities towards it and an interest in its success".* This definition assumes that the stakeholders are active and that they have a positive interest in the matter in which they are involved. On the other hand, Legacy (2010) thinks that stakeholders have a passive role as *"those who will be affected in one way or the other by the results of planning processes".* Healey (1998) refers to people who can 'have a stake' in what is going on, even though they may not know quite how to think about it and what to do with it. Despite these different approaches, all three definitions assume that the group of stakeholders involved in a specific process is an a priori given and therefore that involving them in the design process will require considering the issue of how to actually recognize and identify them.

As opposed to this view, Metzger (2012) claims that designers are actively generating and fostering stakeholders through their work, allowing them to become who they are. According to Metzger, designers cannot collect 'ready-made' stakeholders who exist 'out there'. Rather, by seeing them as such and involving them in the process, designers constitute stakeholder's legitimate identity as concerned parties in the planning process. This perspective problematizes what can be understood as a neutral, objective and professional decision, and reveals how design processes are political actions that can empower, or exclude, participants. At the same time, it highlights the responsibility designers have – not solely towards reaching a solution, but also towards the social consequences of their work. As mentioned in the interview with Hassan, the choice of who to refer to is always political: *"Who do you refer to? Whose shoulders do you prefer to stand on?"* (Appendix 14). Despite the potential in Metzger's perspective, in this project the closest and most involved stakeholders were chosen to reduce complexity and to meet KADK's expectations. This choice was made with the advice of Sønderlev Christensen, Kjølsen and Bascuñan Skaarup.

The overall purpose of the interviews with stakeholders in KADK was to learn about the education in KADK as conducted today. This group was divided into various subcategories as shown in the pyramid below (Figure 15). This model was also presented to the respondents for the sake of transparency as good practice and to help align expectations with regard to the interview's content.

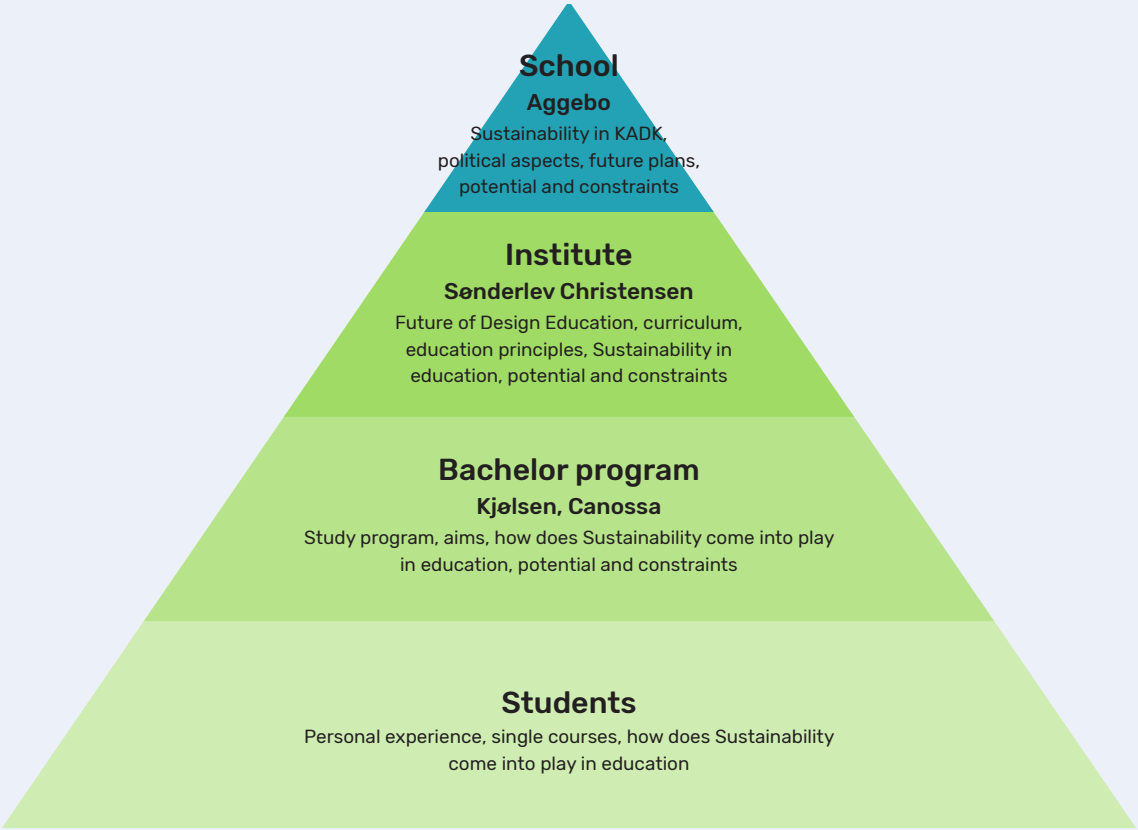


Figure 15: The purpose of the interviews according to category

Experts' interviews

This group of interviews had two main purposes: firstly, to learn about the various ways and approaches that Design Education programs use to address Sustainability, and secondly, to better understand the ways that the concept of Sustainability is being addressed within the Design industry.

While the Industrial Design section at AAU can be regarded as providing traditional education, 'Design for Planet' and 'Design+Change' were both launched within the previous decade, and as such are based on contemporary approaches towards Design Education. Thus, on top of the concrete information regarding the individual programs, the interviews with the teachers from AAU, 'Design for Planet' and 'Design+Change', provided a better sense of the scope between traditional and radical education.

Some of the main insights and takeaways from the interviews were presented as part of the context in Chapter 2, while others will be discussed and presented in the 'Define' phase (see Section 4.2).

4.1.3 Program mapping

Alongside the interviews, an overview on the structure of the study program was needed. Such information is not available online and requires access to the school's internal documents. These documents were roughly mapped visually to make better sense of them (Appendix 19). It was also assumed that such an overview could be used as a communication tool later on in the prototyping phase.

4.1.4 Reflection

Understanding what actually stands behind the names of the classes proved to be a challenge. The different course titles can be interpreted in different ways, based mostly on the reader's previous experience in the field. In addition, it turned out that no single person could provide the full picture: Kjølsen, as the Head of the program, provided a good overview but could not elaborate about the courses she did not teach. The students, on the other hand, could explain the course content, but lacked a broader perspective. Therefore, 'zooming in and out' and being able to connect the various perspectives to a larger yet detailed picture, turned out to be a key competence in managing the research. Only after this task was accomplished, could the 'Define' phase begin.

4.2 Define

The aim of the 'Define' phase is to frame the right problem that needs to be tackled. The research question of this project asks how to address Sustainability in Visual Design Education, within the framework of 'traditional Design Education'. However, this has a very broad scope. To address the research question within the limitations of this project, it was necessary to narrow down the focus area and formulate a new question which is more likely to be able to be addressed. This process involved a number or stages: the first step was to synthesize the data collected from the research. A map and a model were then created to represent the current status of Sustainability in academically-based Design Educations. By considering both the students' perspective and systemic aspects, a refined problem statement was formulated for developing a strategy to address the general problem. After deciding on the direction of the project, stakeholder feedback was received to help align with the process addressed above.

4.2.1 Data synthesis and pattern recognition

Synthesizing and interpreting the qualitative data gathered during the research was necessary in moving towards the next step – using visual display to better understand the data, identify patterns and turn findings into insights.

The first step was to transcribe the interviews (Appendices 3-17) and highlight the most important findings. The key information was then written on Post-it notes, each interview being colour-coded according to the affiliation of the interviewee (Figure 16). Each finding was written on a single post-it note and clustered under one of the three pre-defined research areas: Sustainability, Future of Design and Design education at KADK (Figure 17-18).

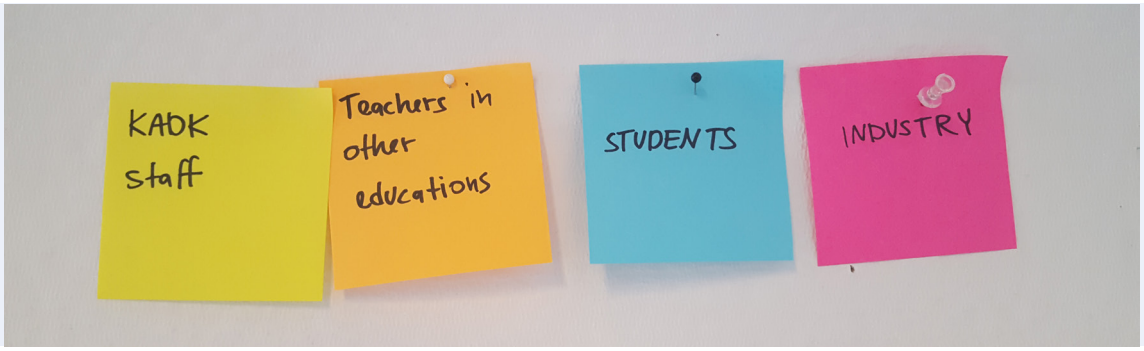


Figure 16: Colour-coding legend

Figure 17: Single notes

Figure 18: Overview of some of the findings

Once the overview was created, the notes were clustered, based on similarities, under subcategories which evolved according to their content (Figure 19). (Full documentation regarding the categorized findings can be found in Appendix 20).

Figure 19: The findings clustered according to category

4.2.2. Insights

After the categorization was made, some overall patterns were recognized. Following this, the insights were synthesized into sketched figures (Figure 20), which became the basis for this thesis.

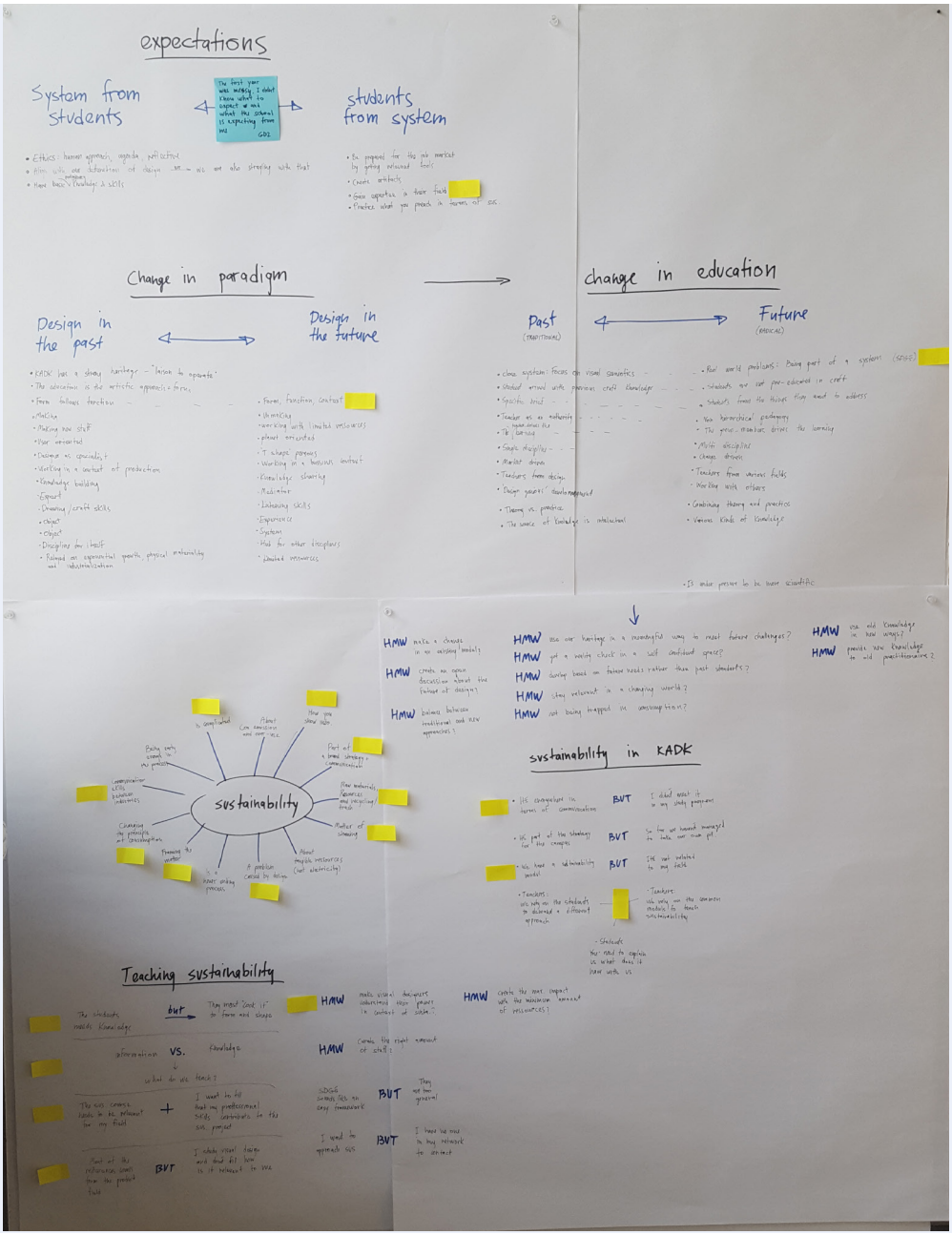


Figure 20: Identifying patterns and turning the findings into insights

Key insights

The main insights resulting from the interviews are presented below. The most relevant quotes in this context were discussed in Chapter 2.

The overall context: a shift in the paradigm of Design

One theme that was implicitly mentioned in many of the interviews is that of overall changes in the field of Design. These changes seem to have a significant impact on the challenges currently faced by Design Education. This category, named here 'The shift in the paradigm of Design' was used to set the theoretical framework for this project, as presented in Chapter 2.

This initial sketch was later developed into Figures 6 and 8 presented in Chapter 2.

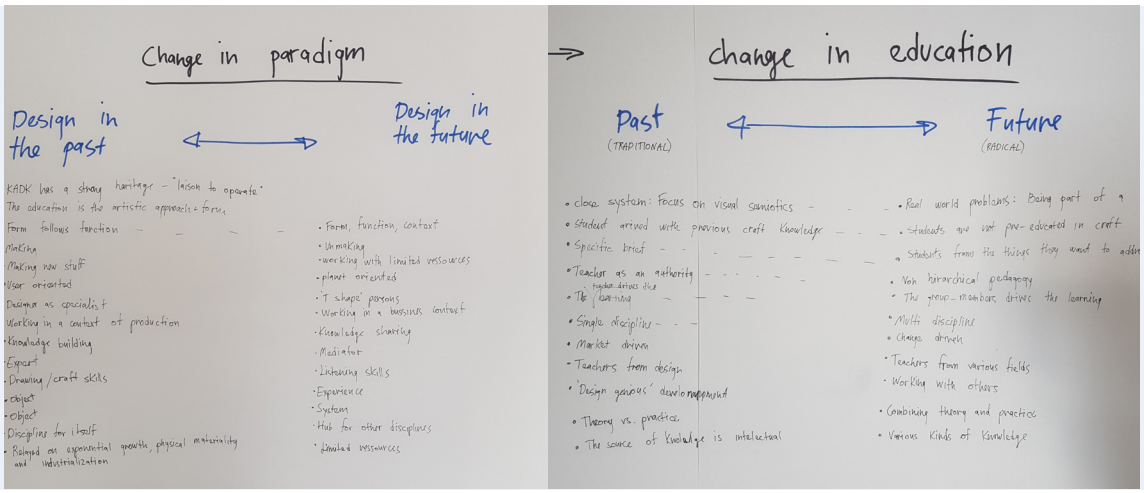


Figure 21: First sketch: a shift in the paradigm of design

Sustainability as a framework

As mentioned earlier, a part of every interview was dedicated to the way Sustainability is being addressed in the study program. Sustainability has often been described as a complex field that requires systems thinking and a trans-disciplinary approach. These are the main features that make this easier to address within the emerging paradigm of Design, rather than within the traditional one. Therefore, it seems that Design schools that adopted traditional approaches, such as KADK or AAU, face different challenges than more radical education programs such as those implemented in Design School Kolding or Linnaeus University. It was thus understood that any proposed solution should suit the specific context of KADK as an institute based on traditional Design Education.

This initial sketch was later developed into Figure 11 (see Chapter 2).

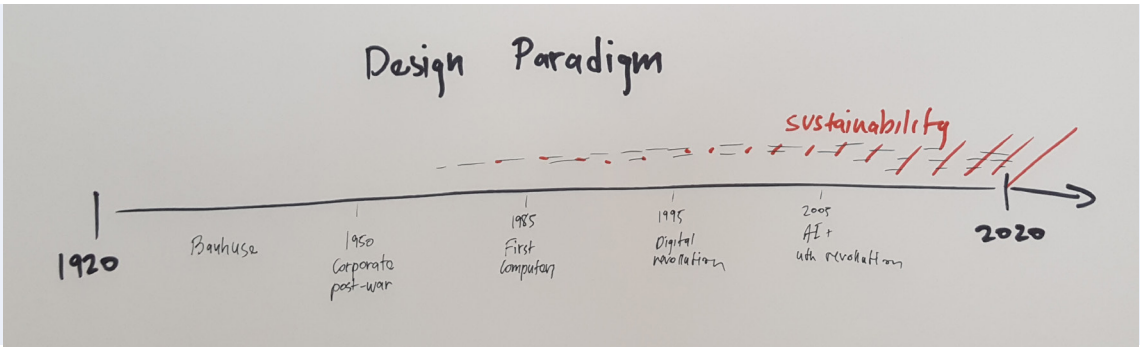


Figure 22: First sketch: Sustainability as part of the new paradigm

Understanding Sustainability

Sustainability was interpreted by the respondents in various ways (Figure 23). However, many of them stated explicitly that it is difficult to understand the relevancy of this framework with regard to Visual Design, since the discipline is not centred on tangible products. Even though Sustainability has an important role in KADK's agenda, students and teachers find it difficult to link Sustainability to their professional practice and therefore question its relevancy to Visual Design. For example, as noted by Kjølsen: *"We have a constant discussion in the program: what is Sustainability within this field?... The references are very product-oriented and that leaves our Visual Designers with a huge question mark in the forehead saying 'why and how does this relate to what I'm doing?'"* (Appendix 5).

It was decided to centre the project on this insight, and on the assumption that any further attempt to address Sustainability needs to build on the students coming to a realization that this has relevancy for them.

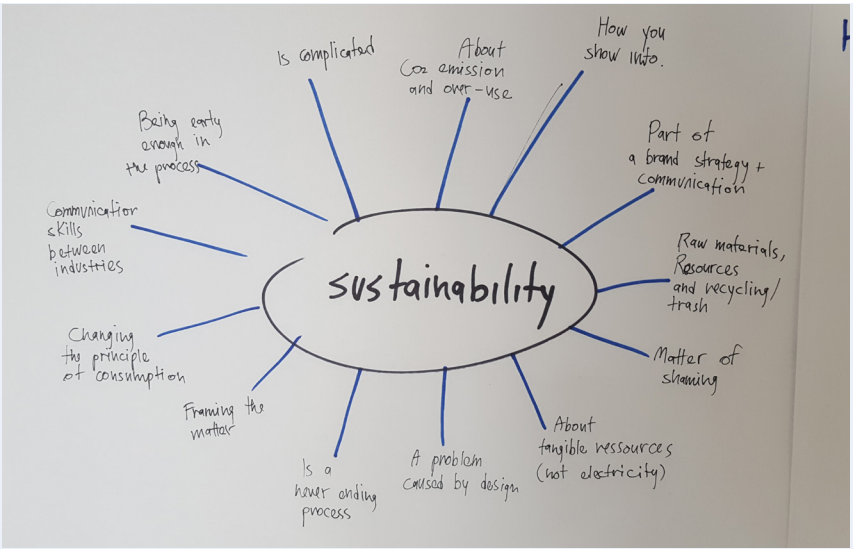


Figure 23: Respondents ideas about Sustainability

Expectations

The differing expectations that the school and its students have regarding Sustainability reflect different perceptions of Design. The school expects students to be reflective, have their own agenda and high ethical standards, and at the same time arrive with prior knowledge and skills. The students expect to learn professional skills, create artifacts and tangible objects based on craft, while gaining the best preparation for the job market that awaits them after their graduation. The school expects the students to align with its perception of Design, but at the same time admits that this perception has not yet been completely formulated. A second-year Game Design student summarizes her feelings: *"The first year was messy. I didn't know what to expect and what the school is expecting of me."* (Appendix 11). This insight was not developed further in the context of the current project.[7]

The Classroom level

Academic education operates on three main levels: a curriculum that sets the overall framework, the study program that determines the subjects to be taught, and the classroom level, in which the two first levels are implemented. Both teachers and students mentioned the special importance of the classroom level.

"No matter what we write down in the curriculum and in all the official stuff... it all boils down to who is in the room. It's the guy or girl on the floor that makes the difference, because that's the interaction with the students. How you frame it, how you deliver it, what your focus point is, how you set up the assignments you do, what are the evaluations and evaluation criteria and stuff like that, so it's on the implementation level that you make the difference. Always. That's what controls the learning. Their skills and their focus and the way they translate this overall lingo down to something concrete" says Christian Tollestrup, Head of the Industrial Design section at Aalborg University (Appendix 17). This insight was used as a constraint, to ensure that the proposed solution will have relevance for the classroom level.

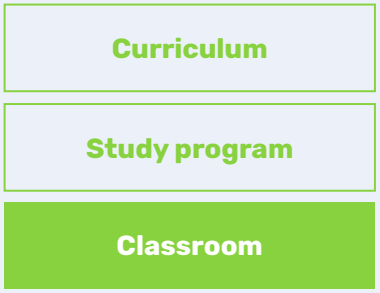


Figure 24: Focus on the classroom level

7 As mentioned by Rumelt (2011): *"Strategy involves focus and, therefore, choice. And choice means setting aside some goals in favour of others".*

4.2.3 Mapping Sustainability in KADK

The interviews clearly showed that Sustainability is already in use as a framework in KADK, mainly under the overall theme of the SDGs. The following map shows the various contexts in which 'Sustainability' appears.

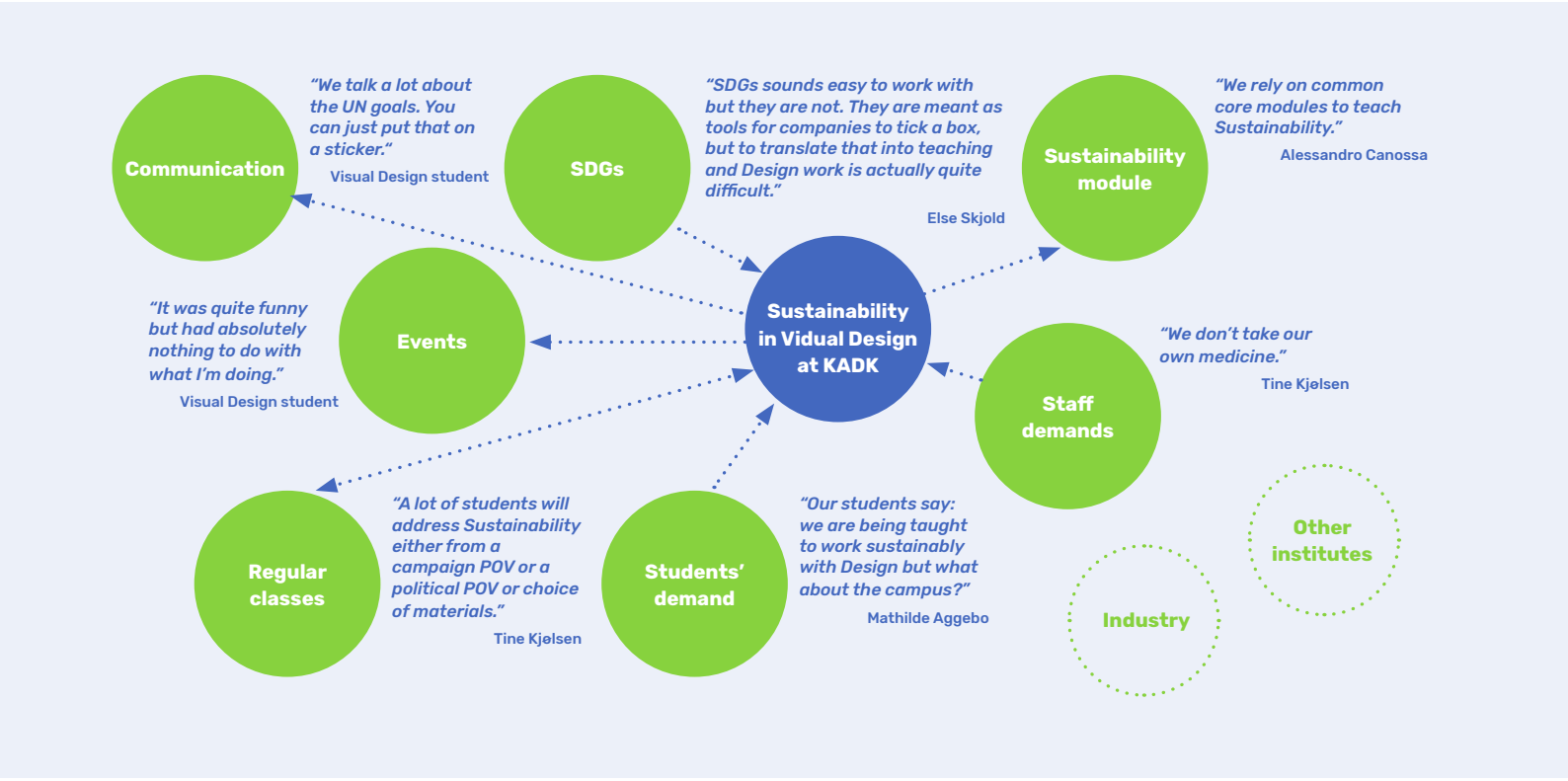


Figure 25: Sustainability mapping in KADK

4.2.4 Sustainability in the current program

Within the currently-implemented education program, Sustainability is mostly addressed in one of two ways:

1. General Sustainability lectures for all students in KADK (not necessarily within the context of Design).

2. A 'Sustainability and Ethics' common module for Product, Fashion and Visual Design students, taught from a general Design perspective.

Sustainability in Visual Design is hardly addressed directly. As a consequence, many students do not understand how Sustainability is related to their education, and how can their professional skills be relevant to it. Even though Sustainability is perceived as an important issue in general, the students do not see how it connects to their professional practice.

Here is a selection of quotes by students relating to this point:

"It is super interesting information but it's not relevant in my education" (Visual Design student, Appendix 9), *"I didn't really feel I get much of the whole course. I just couldn't see any relation to my field"* (Game Design student, Appendix 11), *"It was a general perspective of Sustainability instead of giving us tools of how to use it"* (Visual Design student, Appendix 9), *"I couldn't really see where I can be useful"* (Game Design student, Appendix 11), *"When we do board games it makes sense but when we sit around a program and draw digitally, I don't know what could be changed"* (Game Design student, Appendix 10).

A central hypothesis in this project is that Visual Design students will find Sustainability more relevant once they better understand how they can contribute to it using their professional abilities. To achieve that goal, Sustainability needs to be embedded in the professional courses rather than being treated as a separate topic. As mentioned by Skjold: *"If we are teaching Design students theories about Sustainability and they don't get to cook that into form and materials – then we have lost them. They will just be bad academics".* (Appendix 7)

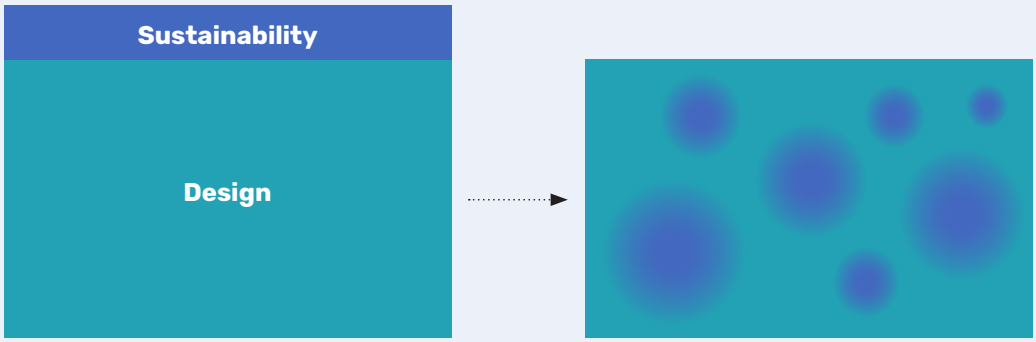


Figure 26: Embedding sustainability in the education

4.2.5 New problem formation

This master's thesis began with the following research question:

HOW CAN WE ADDRESS SUSTAINABILITY IN VISUAL DESIGN EDUCATION?

This question was formed based on the writer's personal interest, world view and motivation. However, it was soon realized that this question is too broad to address and is far from being a purely strategic issue.

Rumelt (2011) writes that good strategy works *"by focusing energy and resources on one, or very few, pivotal objectives whose accomplishment will lead to a cascade of favourable outcomes".* The research question was redefined to meet this criterion, address a critical challenge and *"build a bridge*

between that challenge and action, between desire and immediate objectives that lie within grasp". As mentioned in the previous section, the critical challenge was identified as the disconnection that Visual Design students feel towards the issue of Sustainability. It was assumed that this matter is within reach, and that changing that way it is dealt with could lead to further favourable outcomes. That led to the following problem formation:

WHAT CAN WE TEACH VISUAL DESIGN STUDENTS IN ORDER FOR THEM TO ADDRESS SUSTAINABILITY?

The question puts the focus on the students (rather than the institution) as active agents. The overall goal is to allow them to address Sustainability in their professional practice by using the tools and mindset they learn in KADK. The focus on the students and their future needs, rather than on the teaching itself, is driven by the assumption that *"any advance in design education should have a direct impact on the conditions of the world around us"* (Rodgers et. al. 2013), meaning that this specific project does not focus on education as a means in itself, but rather as a way to promote a change in the world.

This master's thesis chose to focus on the 'What' (skills and mindset) rather than on the 'How' (the way of teaching), since this question could be addressed by the individual teacher and is therefore potentially more achievable. This follows Rumelt's advice that *"the objectives a good strategy sets should stand a good chance of being accomplished, given existing resources and competence".* However, this choice does not obviate the need for broader change, as will be discussed later.

4.2.6 Stakeholders' feedback

At this point in the process the work was presented to the main stakeholders to get some ad hoc feedback. After they approved the area on which the work was to focus, the 'Develop' phase was begun.

4.3 Develop

The previous 'Discover' and 'Define' phases were necessary to gain understanding of the context, and to frame the correct problem. Following this, the aim was to develop a framework that would be broad and flexible enough to apply in various contexts within the bachelor's degree program, while at the same time sufficiently concrete to provide tools for implementation. However, in this project the borders between the 'Define' and 'Develop' phases are blurred, since this stage also requires some definitions to be made. After presenting and discussing the developed model, the prototyping process will be explained, and the stakeholders' feedback will be presented.

4.3.1 Defining the principles

To deal with the research question, it was necessary to establish which mindsets and skills are relevant for Visual Designers to enable them to address issues of Sustainability. The previously-conducted interviews provided some indirect answers which were noted, mostly in the format of 'how may we' questions. Following this, a further desktop research was conducted to identify relevant ideas in the literature. These ideas were noted in the same manner (Figure 27).

Figure 27: Mindsets and skills to address Sustainability in Visual Design – research phase

The yellow Post-it notes were used for insights obtained from the interviews, while the pink notes were used for insights gleaned from the literature.

As mentioned by many respondents, addressing Sustainability is a difficult task, mainly because it is extremely complex. Ræbild stresses that it is necessary *"to curate the right amount of stuff, texts and models because otherwise you just get overwhelmed with all the stuff out there"* (Appendix 15). To make the information comprehensive, the relevant skills and principles were clustered into seven categories. These categories are proposed as contributing to a methodical approach to address Sustainability in Visual Design Education.

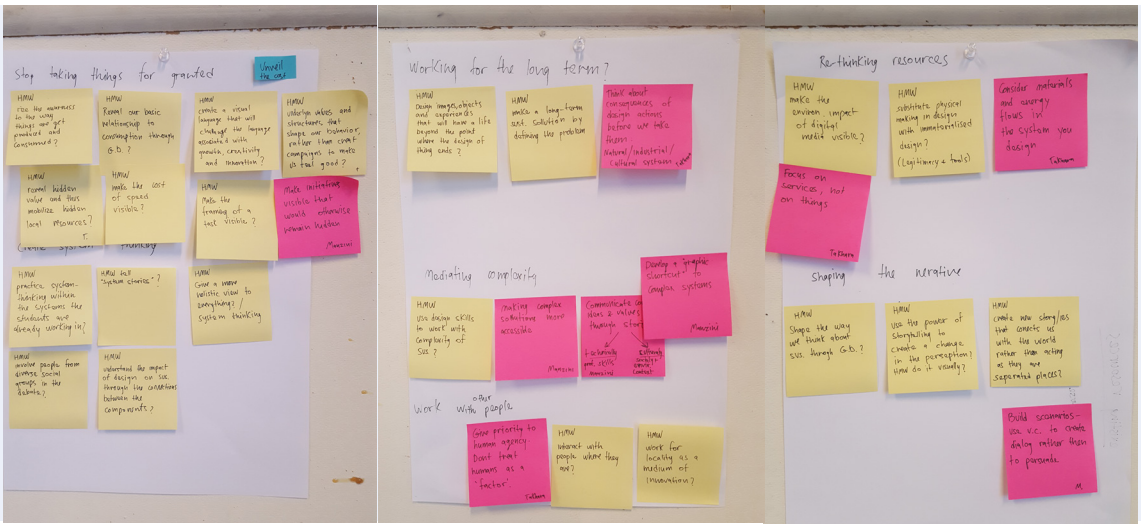


Figure 28: Principles and skills – first draft

Principles and skills considered necessary to address Sustainability in Visual Design

The following seven areas are considered as both principles and skills. These are fundamental categories, mastered through training, that need to be addressed as part of the framework of Sustainability in Visual Design (the colour division will be clarified in the next section).

Figure 29: Principles and skills to address Sustainability in Visual Design

These seven areas will be discussed below. Each of them will be followed by applicable principles that can be used in class in a concrete and operational way. This will address Manzini's (2006) premise: *"The groundwork for macro-transformations and for great systemic changes is laid by micro-transformations and by local systemic discontinuities, i.e. through the kind of changes in which design can play an important role... To give this very general guideline a concrete possibility of implementation, it has to be translated into more operative ones."* The applicable principles under the categories 'Shaping the narrative' and 'Mediating complexity' will be followed by concrete study cases to show how they can be expressed in Visual Design work.

QUESTIONING THE ASSUMPTIONS

Adapting an existing field to a changing reality and allowing it to address contemporary challenges necessitates critical thinking. Questioning the fundamental assumptions is crucial in setting a new perspective that can lead to unfamiliar actions and outcomes. As mentioned by Redström (2020): *"If we look at contemporary challenges such as Sustainability, a solution might not even be visible until our perspective has changed enough to allow another world to come into view"*. In the case of Design in general, and Visual Design in particular, it is specifically the tight connection with consumption, which is so devastating for Sustainability, which needs to be questioned.

The heart of the machine age was the production of goods, and the idea of making things was perceived as a primary condition for the existence of the economy8 (Klein, 2000). For many years, western culture identified life choices with choices among marketable goods created by designers and, as a consequence, the freedom of choosing was equated with the freedom of buying (Vezzoli et. al. 2008). *"We are encouraged to think that our whole life is about consumption – working and buying is the optimal idea of life. We are even being told by politicians that we should buy stuff to support the economy"*, says Skjold (Appendix 7). Therefore, *"In the last century, even when designers have been driven by the most positive intentions, considered as a whole, i.e. as the design community, they have been active agents in oiling the wheels of a catastrophic machine or more precisely, active agents of an un-sustainable idea of well-being"* (Manzini 2006). This idea is expressed by an over-consumption of natural resources in everyday life, something to which design has made a significant contribution (Clune et. al. 2014).

Graphic Design and consumption emerged simultaneously during the 20th century (Claver Fine 2016). This tight connection made it difficult to think about one without thinking about the other. Furthermore, Design supports unsustainable behaviour (through consumption) by constantly striving to make daily practices more convenient (Clune et. al. 2014). To give new meaning to Design, rather than simply continuing to support consumption through processes and practices such as visual identity, image-making, Packaging Design and branding, it is essential to denaturalize and question this bond.

8 An editorial that appeared in Fortune magazine in 1938 argued: *"This is the proposition that the basic and irreversible function of an industrial economy is the making of things"* (Klein 2000).

QUESTIONING THE ASSUMPTIONS

Applicable principles:

- **Question the 'making':** Design is a discipline to do with 'making' but, unfortunately, we collectively create things that nobody wants anymore (Rodgers et. al. 2013). We, therefore, need to downplay the traditional role of physical production in design practice in favour of an approach to innovation which is more social in its means and ends.

- **Imagine alternatives:** A fresh understanding of why our present situations are as they are, is essential to better describe where we want to be, and is key for imagining an alternative future (Thackara 2015).

- **Respect what's already there:** Designers are often trained to change things as a default. We can rather use our skills to reveal hidden value and thus mobilize existing resources (Thackara 2015).

- **Challenge the language:** There is a visual language associated with growth and innovation. We can re-think the common definitions of these terms by creating alternative representations for them (Claver Fine 2016).

APPLYING SYSTEMS THINKING

As discussed earlier in this thesis, Design is historically related to a human scale perspective, which has evolved into what became known as a 'user-centred approach'. As such, Design traditionally represented the point of view of the individual. However, with the broadening of the field and the ambition to tackle 'wicked problems', which are both highly decentralized and appear in heterogeneous contexts, Design needs to broaden its focus and adapt systems thinking as a holistic Design framework (Wright et. el. 2018). The traditional axiom 'Form follows function' could be usefully replaced by the 'Form-Function-Context' principle. Ræbild claims that if we wish students *"to understand business, they have to understand the systems... If you don't understand the systems, you can't think about how we can drive an economy in a different way... Designers need to understand that the stuff they make doesn't exist in a free-floating space and if we want to change something we have to understand how it is connects to the other things... If you want to be free in the sense of deciding who you are going to generate value for, not only economically but in the broader sense, you have to understand the context of your work"* (Appendix 15). Developing questions and illuminating connections within the system can make a difference to both the immediate work and the long-term mission (Wright et. al. 2018).

In addition to them taking a systemic perspective, Visual Designers can also assist others in adapting to it. They can use their skills to facilitate the emergence of a system, rather than concentrating on finding solutions to specific and well-identified problems. By creating visual and interactive languages, Visual Designers can present complex systems, thus creating shared visions within multi-actor contexts, support collective learning processes and build common visions, shared by various stakeholders (Ciuccarelli et. al. 2018). The categories 'Cooperating with others' and 'Mediating complexity' develop this potential further.

APPLYING SYSTEMS THINKING
Applicable principles:

- **Look at the invisible:** Visual Designers usually focus on the parts of the system that are the most visible and tangible (Thackara 2015). However, *"to make the complexity of a system visible means to show what is latent. This is a fundamental step to enable access and intervention to the system itself. Both design disciplines and complexity theories refer to the domain of possibility and the hypothetical, and the specific contribution of design is based on the ability to both make a pattern visible and to assume the point of view of users"* (Ciuccarelli et. al. 2018). Attention needs to be re-directed from the parts to the whole (Thackara 2015).

- **10% - 90%:** When designing an improvement to a common resource (such as a landscape), the design of the device (such as a wayfinding system) will typically only be a small part of the solution; the remainder of the system involves distribution, training, maintenance and service arrangements, as well as partnership and business models. These are just as important as the design (Thackara 2015).

- **Consider values and structures:** Campaigns to make us feel good about ourselves deflect attention from the underlying values and structures that shape our behaviour in the first place (Thackara 2015). To tackle a problem in a meaningful way, we must recognize these values and structures rather than ignore them.

- **Re-think the brief:** Systems thinking provides a holistic Design framework for what-to-make or not-to-make, and for how-to-make. Rather than starting a design process from a narrow brief to design something particular, we can start from observing the system and framing the brief accordingly.

- **Evaluate the work by using various perspectives:** Receive input and feedback from other perspectives rather than Visual Design, to address a broad context and include various points of view. As mentioned by Sønderlev Christensen: *"It will be interesting to do not just designer-to-designer conversation feedback, because then it's much more looking into form, the language of the things, aesthetics, but maybe bring other actors into this session."* (Appendix 4)

COOPERATING WITH OTHERS

As a complex field, Sustainability cannot be effectively addressed by a single person. Within a typical design team, it requires collaboration between stakeholders having different professional backgrounds, who hold various roles within the group. In the context of the design process in general, working under the framework of Sustainability requires one to involve and consider the perspectives of non-designers who may be affected. Voûte et al. (2020) estimates that collaboration and communication may take up at least 50% of modern design work. This makes communications skills mastered by Visual Designers a key to success in every process.

Design Education therefore needs to 'let go' of the previous model of the 'design genius' in favour of teamwork and collaboration, as mentioned by Skjold (Appendix 7). Ræbild says: *"It's about co-creating with communities which can be really hard, but possibly quite an important skill to possess, so we don't seat ourselves and decide what others should do... we need to be able to engage in dialogue-processes of ideation with other people"* (Appendix 15). Slåttedal Jacobsen adds: *"We have to build communication skills to communicate across industries, and maybe design is a way to go with that because it can gather viewpoints of many different actors at the same time and look at a problem from many different angles... capitalism is very much based on competing for the best resources and the best skills. Even though that's the nature of the game, we might need to lower our guard a little bit and open up to share more of our skill sets, learnings, and both our successes and failures, so that other people in the same field can learn from it."* (Appendix 16)

COOPERATING WITH OTHERS

Applicable principles:

- **Consider people's agency:** In every project the people and communities affected must be considered. Any design action that rearranges places and relationships is an exercise of power. A good test for the sensitivity of a design proposal is whether it enables people to increase control over their own territory and resources (Thackara 2015).

- **Involve the community you design for:** Many ideas will come directly from the community being addressed. A main role of designers can also be to act as a coach, guide or mentor (Sanders et. al 2008).

- **Facilitate dialogues:** To collaborate with others, people must share a similar vision of what to do and how to do it. Visual Design can be an effective tool in helping facilitate such a dialogue (Manzini 2015).

- **Create conversation prompts:** Visual Design can be used to create tools to trigger, support, and summarize social conversations. For example: to illustrate the state of events and offer viable alternatives in a more accessible way, or to consolidate outputs and offer the possibility of replicating them (Manzini 2015).

- **Examine needs, not symptoms:** There is often a gap between people's demands and their real needs. Make sure you address the real needs (Sanders et. al 2008). That may require challenging the brief and changing it if necessary.

- **Work outside the classroom:** This will enable designers to meet people in real contexts (Claver Fine 2016). Follow your work to learn how it is being perceived and what can be further improved.

WORKING FOR THE LONG-TERM

Designers tend to expect results immediately, within hours or a few days at the most. This tendency creates a clash with Sustainability which, in turn, requires a long term perspective. In addition, Visual Design artifacts appear to hold less potential to accumulate value or meaning over time (Claver Fine 2016), since they are often dependent on current trends and communication requirements, or are expected to be constantly upgraded to remain competitive and relevant.

To change this situation, we need to think about the significance of Visual Design not through the product itself, but rather in terms of the power to move people, shape meaning, and persuade through both dual visual and verbal means (Claver Fine 2016).

WORKING FOR THE LONG-TERM

Applicable principles:

- **Think forward:** Consider what may be the future consequences of the design actions you are taking now. Consider the natural, industrial, and cultural systems that are the context of your design actions (Thackara 2005).

- **Extend life:** Design images, objects, and experiences that have a life beyond the point where the design of the object, product or service has ostensibly ended (Claver Fine 2016).

- **Shift focus from reactive problem-solving to co-creating the future:** To build a positive vision for the future it is necessary to highlight the gap between a future vision and present reality, and work towards the former (Narberhaus et. al. 2015).

- **Work towards a slow design:** Industrial society works on the principle that faster is better, but the victory overcoming distance and duration may carry with it a heavy cost. Can we work towards a 'slow design' movement? Can we work towards a design process that benefits and gains value from being slow? (Thackara 2005).

- **Re-use:** Breath new vitality into a previously existing and/or exhausted valuable cultural or ecological resource, and restore it through one's design actions (Steves et. al. 2018).

- **Resilience:** Instill the capacity for design outputs to grow and repeatedly bounce back in the face of unforeseen challenges (Steves et. al. 2018).

- **Re-define the problem:** Choose a question that can lead to a long-term sustainable solution (Steves et. al. 2018).

RE-THINKING RESOURCES

The issue of resources in Visual Design can be addressed from two perspectives: on the instrumental level, the two main resources used in the field of Visual Design are paper (for print) and electricity (for screen-based products). To better understand how these materials became so dominant, what our limitations are, and how can their usage be reduced to support Sustainability, we need to consider what set of circumstances led to those very materials we now have so readily on hand (Claver Fine 2016). When we consider electricity, even though digital-media professionals may not actually create tangible objects, their products may have a significant environmental impact in terms of energy consumption and e-waste. Whereas websites seem superficially to be 'weightless' compared to physical media, they may nevertheless consume significant amounts of energy in creation and distribution (Shehabi 2018).

On a more abstract level, the matter of resources involves a bigger question that needs to be addressed: Can we move from 'making' to 'unmaking'? as mentioned by Hassan (Appendix 14): *"The art of living in a 'damaged planet' is a different sort of art than forming something of things we take for granted as being always present."*

RE-THINKING RESOURCES

Applicable principles:

- **Look back into history:** Becoming familiar with the history of production can help us understand how certain conventions (such as the usage of paper) have evolved. We can then challenge these conventions and look for alternatives (Claver Fine 2016).

- **Think about the system:** Consider materials and energy flows in all the systems you design (Thackara 2005). Learn what it takes technically to operate Web-based Design in terms of energy consumption, and what happens to the paper after we are done using it.

- **Be energy efficient:** Visual Design patterns and techniques which work well for print can quickly turn a website into an energy hog, reduce the quality of user experience, and exclude people with access to less than cutting-edge technology. We need to learn the necessary technical principles to design efficiently for the web (Shehabi 2018).

- **Create new aesthetics:** Visual Design has the ability to create new aesthetics based on upcycling and reusing existing materials.

- **More from less:** Create the maximum impact with the minimum amount of resources.

SHAPING THE NARRATIVE

The way we perceive the world and act in it is very much dependent on the ideas we choose to embrace out of all the ideas that are 'lying around' (Democracy now, 2020). As experts in communication, Visual Designers are responsible both for the ideas they choose to share, and for the way they tell the story. By highlighting content, framing concepts and delivering one message over another, Visual Designers affect what and how others see and hear, and not least – the way we imagine the future. The process of choosing what to represent and what to keep out of sight is a political action, intentional, and arbitrary (Corbellini 2010). The act of crafting messages using words and images is not simply a method for explaining a text or illustrating it, but rather a process of interpretation that creates new meaning (Claver Fine 2016).[9]

9 The process of creating meaning was broadly explored in the field of Semiology. The theories of de Saussure, Peirce, Jakobson and Barth, denaturalize the way meaning is created and are therefore highly relevant within Visual Design Education.

SHAPING THE NARRATIVE

Applicable principles:

- **Frame:** Look for meaningful problems and frame them within more appropriate and responsible contexts (Irwin 2015). Treat 'content' as something you do, not something you receive and pass over.

  Case Study: Climate change is a women's issue - This mini-site tells the story of climate change from a woman's perspective. By choosing this framework, the site highlights the impact of what is considered to be an 'objective' term on people's life, and translates an abstract concept into something concrete, to enhance solidarity and concern.

Figure 30: Climate change is a women's issue

- **Amplify weak signals:** Highlight little-known cases, with their characteristics, results and underlying values. Making them visible may then feed the wider conversation on socially-recognized values (Manzini 2015).

  Case Study: Something is happening to Norway by Mads Nyborg Støstad and Patrick da Silva Sæther: This photo reportage gathers small local stories from all over Norway into one larger picture that demonstrates the increasing effect of global warming. Thus, specific cases that may be perceived as incidental, gain an impact that cannot be ignored.

Figure 31: Something is happening to Norway

- **Connect actions to outcomes:** Connecting our actions and their consequences is key to understanding how our individual choices accumulate into a greater impact on the planet. Create stories to connect between us, the economy, and the world around us (Thackara 2015).

  Case Study: Spread of the Corona Virus by Harry Stevens - This abstract animation shows how one person's choices can drastically affect a huge community.

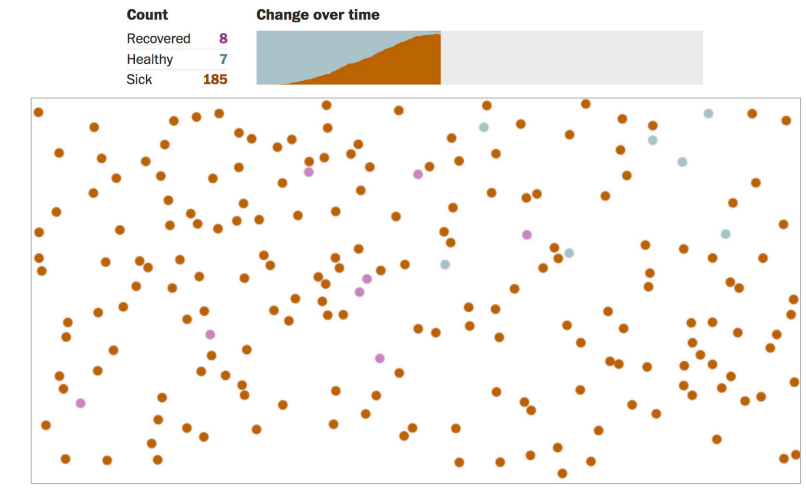


Figure 32: Spread of the Corona Virus

- **Imagine:** Offer an alternative to the current situation by imagining a possible future in a visual way (Irwin 2005, Margolin 2007).

  Case Study: What Counts by Giorgia Lupi: This exhibition explores a new approach to Census data and shows one way this may be conducted in the future, by exploring the potential of counting people not just with numbers or statistics, but through more humanistic models that recognize (and even emphasize) individuals as complex, nuanced, and multi-layered beings.

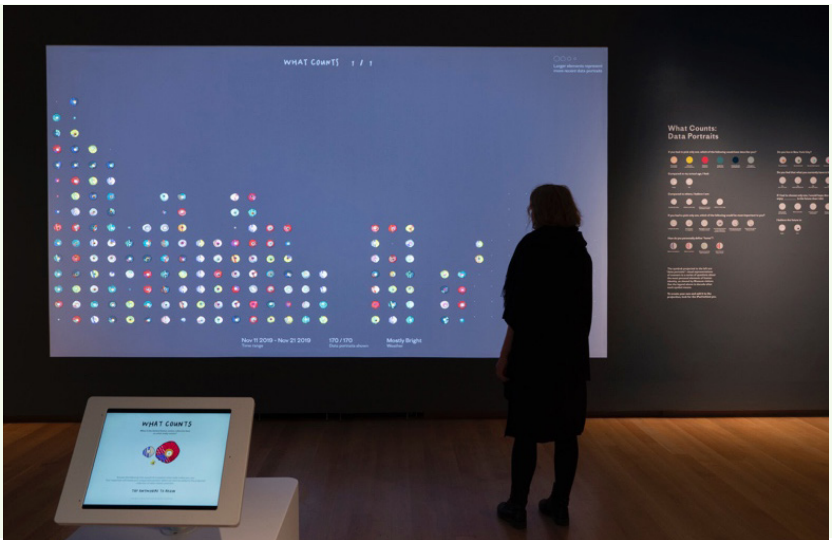


Figure 33: What counts

- **Entertain:** No story is relevant unless someone wants to listen to it. Address serious topics using non-serious means in an entertaining and engaging way (Micklethwaite et. al. 2017)

  Case Study: Minecraft's 'Uncensored Library': A group of activists built a virtual library inside the Minecraft universe, where gamers can access censored content from all around the world. They, therefore, used the entertaining game platform to overcome censorship and encourage audiences to engage with a serious task.

Figure 34: Minecraft's 'Uncensored Library'

MEDIATING COMPLEXITY

Visual Designers can help in mediating complexity in two main ways:

Create access to knowledge: We all live with a constant influx of information and need ways to make sense out of it. Visual Designers have the ability to create frameworks to make visual sense of complex information (Cottam et. al. 2004). Their visual toolkit allows them to curate the information and make it accessible, visible, interesting and beautiful (Claver Fine 2016). Burkhard (2004) defines two complementary domains where the potentialities of visualization are explored: The visualization of data, information and knowledge and the visualization of the structure of complex social phenomena.

Facilitation: In a team trying to solve complicated problems, visual representation can create a common platform for discussion, avoid misinterpretation and help build a shared vision (Cottam et. al. 2004), as also discussed under the category 'Systems Thinking'. *"By creating tactile and visual examples that could be computer interfaces, apps, products, houses" designers can help to understand "what it looks like, what does it feel like, what should we do with that... When we have a prototype, it's much easier to discuss because it becomes tangible. When we work with Sustainability, this way of taking something extremely complex and make it tangible and hands-on is so important and so underestimated"* says Skjold (Appendix 7). These 'boundary objects'[10], made by designers, facilitate a discussion between stakeholders, companies, and users by going directly to our senses.

10 The term 'Boundary object' was first presented in an ethnographic context by Star and Greisemer in 1989 (Trompette et. al. 2009). However, it is now used in the field of Design as *"a 'thing' that is both defined enough that several communities can recognise it as the same thing, yet flexible enough that each community can use it according to their own needs. In the conceptual sense, they can be abstract or concrete, but either way they exist outside of peoples' heads"* (Cooper 2012).

Applicable principles:

- **Curate:** Choose what to bring to people's attention (Irwin 2015).

  Case Study: The journey of a pair of jeans by SokFok studio: This short animation tells the story behind the production of a pair of jeans. The designers chose to describe the entire production process, and thus to bring the environmental price paid to consumers' attention, which a marketing perspective tends to hide.

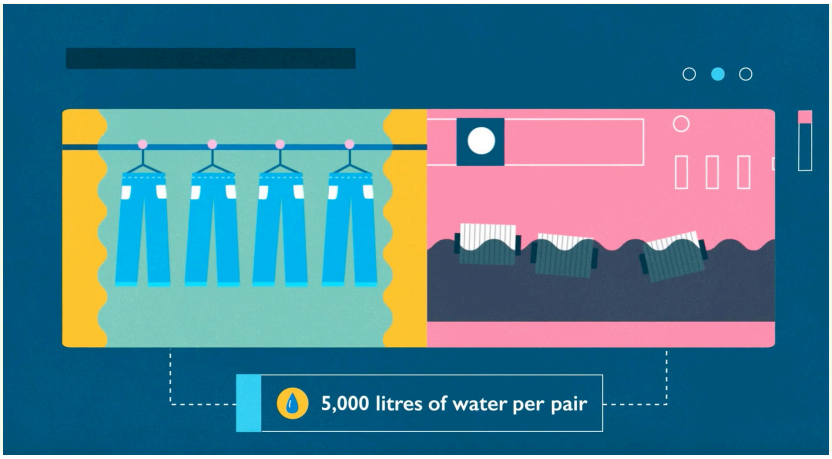


Figure 35: The journey of a pair of jeans

- **Make processes transparent:** When people have a better understanding of a system or a process (like food or a fashion supply chain), they can make decisions accordingly (Narberhaus et. al. 2015, IDEO, online).

  Case Study: Rails and wheels by Infografika agency: By unfolding a production process in a visual way, this booklet enables non-experts to understand it too.

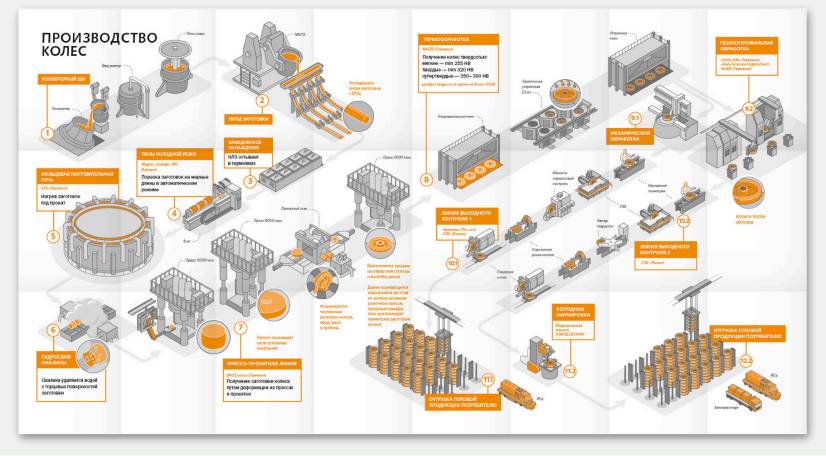


Figure 36: Rails and wheels

- **Make the invisible visible:** Make invisible things that affect us and can be quantified, such as CO_2 emissions, visible (Nieman 2018).

  Case Study: CO_2 emissions calculator: This platform allows users to calculate how much CO_2 emissions they create based on their habits, and offers an equivalent donation to compensate for it.

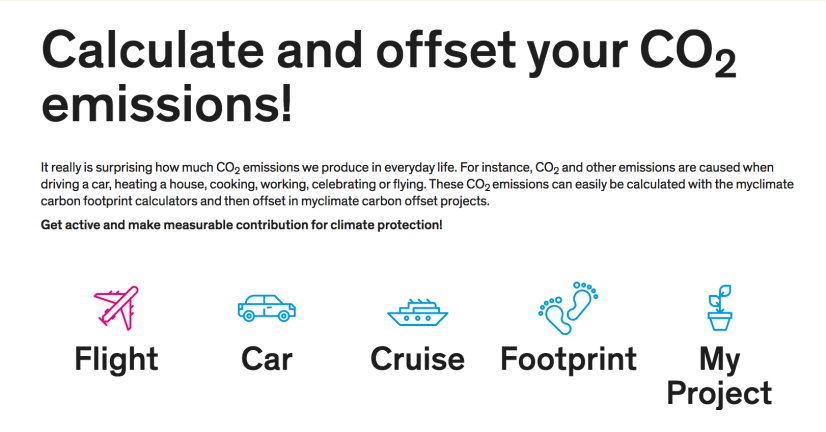


Figure 37: CO_2 emissions calculator

- **Represent data visually:** Make data available in an accountable and meaningful way. This allows people in fragile situations to create a sense of a predictable and safe future (Nielsen 2018).

  Case Study: COVID-19 data pack by Information is beautiful: This data visualization created during the COVID-19 pandemic helps reduce panic by putting things in proportion as part of a bigger picture.

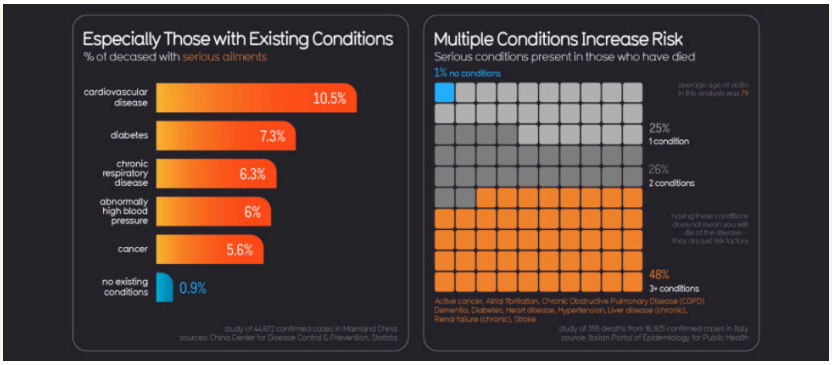


Figure 38: COVID-19 data pack

- **Rearrange data:** By rearranging numeric data, reinterpreting qualitative information, locating information geographically, and building visual taxonomies, we can develop types of graphic shortcuts to describe and unveil the hidden connections in complex systems (Manzini 2015).

  Case Study: One Soil: The maps in this platform reveal insights about local and global crop trends. Thus, the platform helps to point out changes, predict global trends at all levels, and thereby foster smart decision-making.

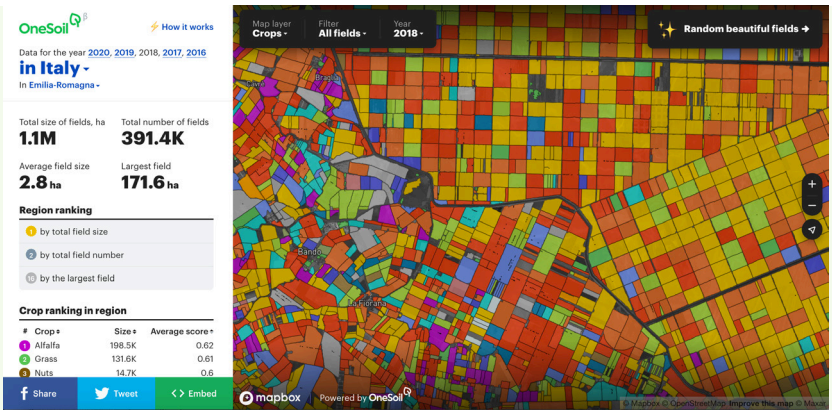


Figure 39: The soil

- **Share and include:** By including other people's knowledge and information in an open-source practice, the visualization process can become a tool for community building (Manzini 2015).

  Case Study: Building hopes by Giorgia Lupi for Google: This data visualization is an AR-powered visualization that explores people's hopes about life in general. When opening the app, the user is asked to walk around their immediate surroundings choosing hopes and selecting how hopeful they are regarding each one. Each hope is represented by a colourful stone and these are organized into a rotating sculpture. Once the sculpture is ready, users can explore their data and how it compares to the Google Trends in their area. They can also discover data sculptures created by other people in the same area.

Figure 40: Building hopes

- **Facilitate thinking:** Use visuals in general and sketching in particular both as a means of thinking and as a way of communicating ideas to others (Meyers et. al. 2020). This can help stakeholders negotiate shared understanding and shared meaning about a problem and its possible solutions (Burkhard 2004).

  Case Study: Butterfly Diagram by Ellen MacArthur Foundation: This kind of low-fidelity sketching can be used to discuss different ideas among the group members.

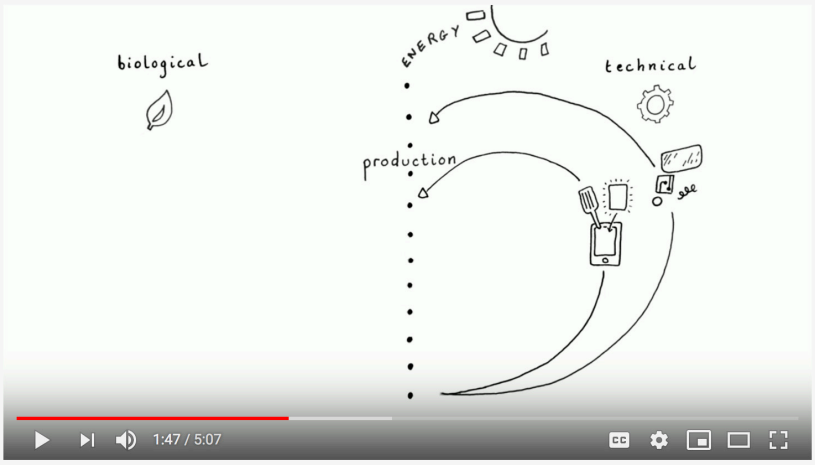


Figure 41: Butterfly Diagram

4.3.2. 'The Onion Model'

All seven principles introduced above are relevant for visual designers in the 21st century and will ideally be part of any contemporary Design Education. However, it was decided to categorize them into three groups (Figure 42):

Universal skills – general skills that should be taught as part of any educational process (Frascara 2020). These are not discussed further as part of this project.

21st century skills – relevant for designers, as well as for other disciplines.

Design skills – relevant for designers from various disciplines.

Visual Design skills – relevant specifically for visual designers.

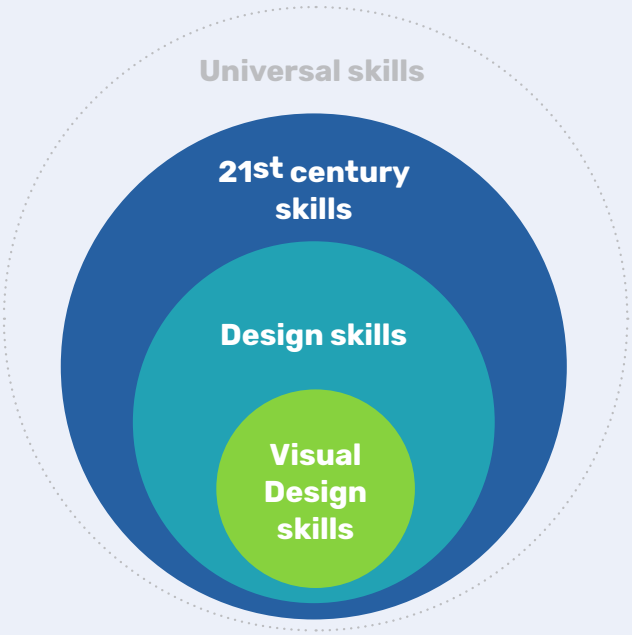


Figure 42: The Onion Model

This model is in accordance with Meyer et. al.'s (2020) recommendation that Design Education will *"cover a set of core principles, but then offer advanced courses that might be unique to the special talents of the school or that might lead to one of a number of specialties within design."*

Although some scholars claim that *"it is likely that any Design school of the future will need to be more 'undisciplined'"* (Rodgers et. al. 2013), it is the author's view that mastering a specific discipline will still be relevant to maintain relevancy in the labour market.

More advantages of this model and examples of how it can be used, will be introduced and discussed in Chapter 5.

4.3.3. Prototyping

Defining the scope of the prototyping

At this point in the process, several components of the final framework were developed: the principles and skills presented above, applicable actions that can be taught within various classes, and the 'Onion Model' for helping setting priorities in further development and implementation. The next step was to test this framework with the stakeholders, to receive their general feedback, and examine whether this solution can be used in a real context.

The initial plan was to run a half-day workshop for the bachelor's degree program staff (as was already confirmed with them). During the workshop the framework was intended to be presented, followed by a prototyping session aimed at finding ways of implementing the 'applicable principles' in existing classes (Figure 43).

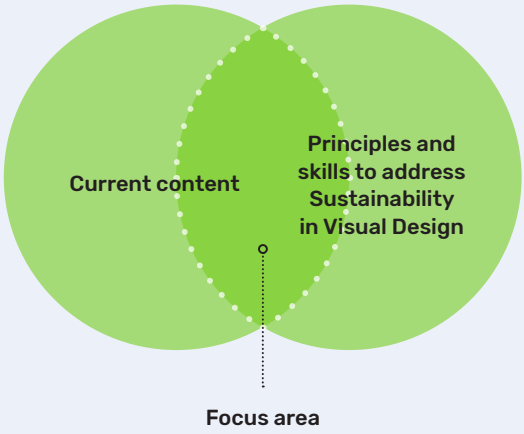


Figure 43: First focus area for prototyping – optimizing the current content

The purpose of the prototyping session was to co-design with the teachers, as experts in their fields, gain from their knowledge, and use this opportunity as a 'moment of truth' to assure that the theoretical ideas correlated with reality.

Changing plans

In mid-March 2020 the Danish authorities announced that all universities were to be locked down due to the COVID-19 pandemic. The daily connection with the students and staff at KADK ceased, and it became clear that the co-creative workshop would not be able to take place as planned. The new situation emphasized the importance of interpersonal relationships as part of the design process. The stakeholders were not obliged to collaborate, and once meetings in person stopped, it was more difficult to engage them with the process. This inevitably affected the work's progress and diverted the process towards a more theoretical path.

Home task

A different method to communicate and test the solution was required. A first draft of the product report was sent to Kjølsen, Sønderlev Christensen, Bascuñan Skaarup and Henriette Melchiorsen – a teacher in both the Sustainability and Strategic Design modules, for their feedback. After they read the report and raised no critical issues, a home assignment was sent to them (Appendix 21). This was followed by an online meeting to present and discuss the results. The home assignment was also sent to two of the third-year students, and this was followed by personal Skype meetings.

Prototyping purpose

The purpose of the home assignment was to ideate how the principles and skills could be implemented in the current classes. To make this more effective, the scope of the prototyping was limited to the category of Visual Design skills (Figure 44).

The design of the task was based on two assumptions: the first was that the Visual Design skills do not necessarily need to be taught separately as stand-alone classes, but can rather be implemented in the existing context. The second assumption was that it would be easier to implement the suggested framework by optimizing existing resources, rather than requiring new ones. As Manzini (2006) had commented: *"The best strategy was always the one which required the least physical effort".*

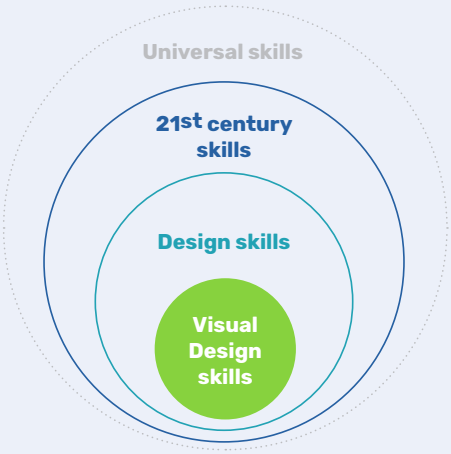


Figure 44: Second focus area for prototyping – Visual Design Skills

The Prototyping Process

The process for creating the prototype and using it for testing was as follows: a set of cards was created for each one of the 'Visual Design' categories: 'Mediating Complexity' and 'Shaping the Narrative'. Four principles were selected from each category.

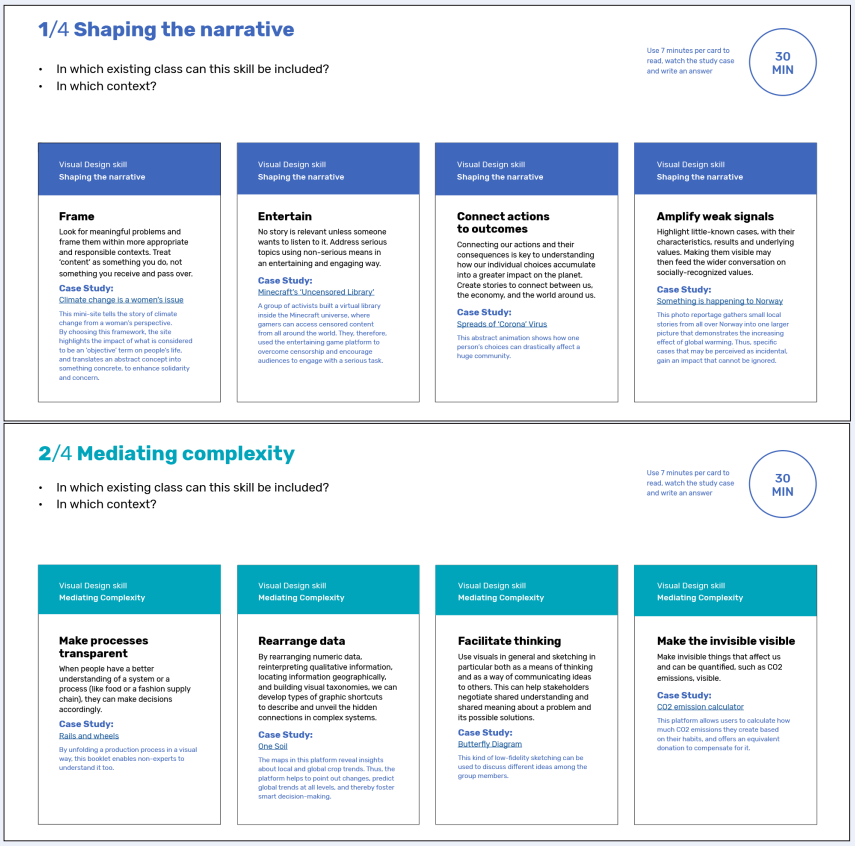


Figure 45: The cards

Each card was dedicated to a single principle and included its general description followed by an example (including a link) for clarification and inspiration. The participants were asked to read the text and watch the linked example on each card. They were then asked to think about for which of the existing classes could this principle be implemented, and within which context (for example: 'framing' could be implemented in the 'Narrative' module as part of…). After they related to all eight cards and had generated an 'inventory' of ideas, the participants were asked to choose one principle from each category and develop it into a complete exercise to give the students. After the task was accomplished, a Zoom meeting was held, to present and discuss the ideas (Figure 46).

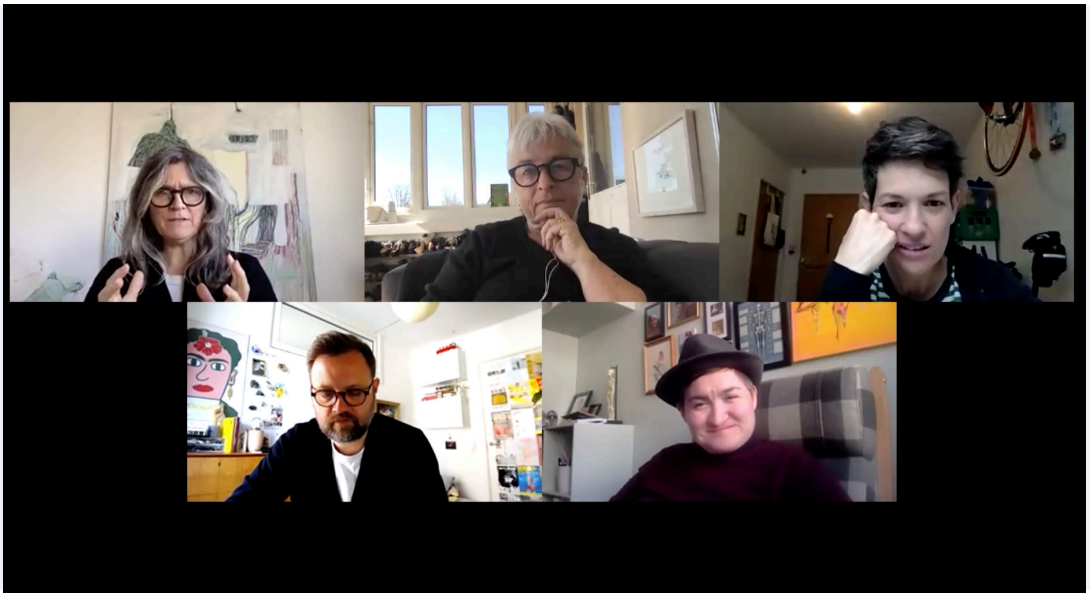


Figure 46: Post-prototyping session

4.3.4 Prototyping Results

Ideas and feedback from the staff

The type of feedback gi*ven by the participan*ts was influenced by the role they have in KADK. While all participants were considered as stakeholders in the process, it is the teachers, who plan and run classes, who are the actual users. Thus, Kjølsen and Melchiorsen related directly to classes' content, Bascuñan Skaarup related more to the model, and Sønderlev Christensen reflected on the education in general. It is assumed that the nature of the digital platform and the lack of tangible objects, directed the conversation more towards a general discussion rather than focusing on concrete ideas. The points that were identified as the most important feedback are listed below:

Feedback regarding the principles:

- The principles under the 'Mediating Complexity' category could be applied in a series of workshops, mostly in the context of 'Visualization and Information'.
- The 'Connecting actions with outcomes' principle can be developed into a workshop, which will be presented in detail under the 'Deliver' phase (see Section 4.4). This can be executed right away as part of the second semester of the program.
- The 'Making systems visual and processes transparent' principle could be used in the context of the 'Design Ethic and Sustainability' module to map the value chain.
- The 'Facilitating thinking' principle could be used in the 'Strategic Design' module as an approach to help understand and develop new business models. This idea will be developed into a workshop which will be presented in detail under the 'Deliver' phase.

General reflections:

- Communication: Communication is the most important part of a process and takes up almost 90% of developing a product. It is a new focus area in terms of Sustainability, and has the potential to be an entire track in the School, focusing on how to communicate complex narratives and involve speculative thinking that enables us to foresee a preferred future.
- Focusing on the process: There is a growing need for designers who can contribute to the process by visualizing it. The traditional Design skills currently taught (Poster Design, for example), are not necessarily relevant for strengthening this skill. To meet those needs it may be necessary to shift the focus from the end-product to the process. A way forward could be to change the end goal and add some requirements to the process. For example: by making the data-gathering for a project visual. It is hard to implement this strategic point into the education process and it is interesting to consider why it is so hard.
- Communicating data to change behaviour: Linking complicated data to something we all understand is a huge task for Visual Designers, since once we receive the information it affects our behaviour. At the current time, the COVID-19 pandemic emphasizes this point dramatically: *"people are not shaking hands and we are having a Zoom meeting".* We can see that this aspect becomes highly relevant.
- Linking the principles to the SDG framework: Use Social Development Goals as constraints or focal points, for example: how can 'framing' be used in the context of the SDGs? How can 'mediating complexity' be used in the context of the SDGs? Or more specifically: How can 'strengthening weak signals' create opportunities for complying with SDG 12?
- The scope of the required change: Incorporating these principles into existing classes is not enough. The whole foundation has to be changed.

These general reflections will be further developed into recommendations in the 'Deliver' phase (Section 4.4).

Ideas and feedback from the students

The prototyping process described above was also tested with two of the Visual Communication third-year students. The initial assumption was that the students would provide a good understanding of the opportunities available to include the principles in the current program, as they are familiar with its entire content. This assumption turned to be wrong, since the respondents were very concrete, rather than reflective, in this regard. However, the unintended benefit was gaining some reflections about the education process in general.

The main insights:

Principles to develop further:

- 'Facilitating thinking' can be further used under the 'co-design' module.
- 'Connecting actions with outcomes' has further potential as an exercise.

- Many assignments that the students are given are centred on personal experience and point of view (for example: visualizing personal data).
- There is a strong focus on entertainment and aesthetics in the current program.
- In the 'Storytelling and Narrative' module the students learn how to present an idea. However, this is done through rhetoric rather than in a visual way.
- As part of the collaboration with Rigs Hospital in the 'Sustainability and Ethics' module, the students had the chance to work with a real client to solve real problems. The project ended with a presentation and the students did not get to track their work and see how people responded to it, which was disappointing for them.
- The actual teacher in the class has a critical role in making a subject relevant and engaging.
- Students are more attentive when the teacher comes from the same field as they do. They automatically assume that the content is more relevant to them.
- Most of the critique in the program is given in a 'one-on-one' format. The students think it will be beneficial to have some open critique sessions too, with multiple participants and perspectives.
- There is much theory in the program, and the students find this overwhelming.

Reflection on the results of the prototyping

The prototyping sessions supported the assumption that Visual Design skills can be taught as a part of the existing classes, and pointed out some opportunities to do so. However, all stakeholders – from the students to the senior management – agreed that this is not sufficient, and further changes will be required to address emerging needs.

Followed these insights, two main options arose:

1. Develop specific exercises and briefs to teach students relevant skills and mindsets to work with Sustainability. Such a choice could address the research problem but will not make the most out of the valuable insights that the process garnered.
2. Consolidate the processes recommendations. This choice could be more beneficial for the stakeholders but would miss the scope of the problem formation and would not necessarily be the desired outcome from an academic perspective.

It was therefore chosen to combine the two, as will now be presented in the 'Deliver' phase.

4.4 Deliver

In the last phase of the Double Diamond, 'Deliver', the final concept is transformed into deliverables for the stakeholders at KADK. Both rhetorical and visual methods were used to communicate insights from different perspectives. The outcomes of the project were merged with learnings from the literature, and together these form the final report (Appendix 22) which included:

1. The Theoretical context, project's scope, research question and main insights.
2. The Sustainability principles and skills and the applicable principles.
3. The Onion Model.
4. Examples for exercises and briefs for the two class categories: 'The thematic classes' and 'the toolbox' (as defined in Section 2.4.2) which are given in the next section.
5. Further recommendations for future development which will be discussed below.

4.4.1 Assignments

One brief was developed for each class category (as defined in Section 2.4.2), exemplifying how the principles can be used to provide student with relevant skills and mindsets within the framework of Sustainability. The categories, mostly chosen by the participants, were adopted, assuming that what made sense to the participants will probably make sense to a wider audience too. The briefs are generally based on the ideas suggested by the teachers in the workshop.

Brief no. 1

Class category: The Toolbox Group: Visual Design skill
Category: 'Connecting actions with outcomes'
To be included in: 'Visualization and Information' theme.

Connecting our actions and their consequences is key to understanding how our individual choices accumulate into a significant impact on the planet. To be able to do so, we need new stories that help us create new connections between us, the economy, and the world around us.

Watch the following study case: **Spread of the Corona Virus**

1. This abstract animation by Harry Stevens shows how one person's choices can drastically affect a huge community.

2. Find a line of actions from your own life that shows how a single action you make may connect to other actions and affect others.

3. Create an abstract visualization of your choice according to the following steps:
   a. Create the story line: draw a schematic storyboard.
   b. Present it to your group members and receive their feedback. Adjust accordingly.
   c. Visual research: Collect five examples of abstract visualization. Present them to your group members and mention one thing you find interesting, effective or smart about each.
   d. Visual language: Choose one frame from your storyboard and develop it to include the final look and feel.

4. Create a 30-second animation based on the storyboard and the visual language you developed. Present it to your group members and modify the video based on their feedback.

5. Deliver: Two groups present one to the other, each one receiving and giving feedback.

As mentioned before, KADK is using the SDGs as a framework. In order to address them directly, the brief could be slightly modified according to the following example:

How can the 'Connecting actions with outcomes' principle be used within the context of SDG 13 (climate actions)?

Modify point 2: 'Find a line of actions from your own life that shows how your own actions creating CO_2 emissions connects to other actions and together create a larger affect'.

Brief no. 2

Class category: The thematic classes: Visual Design skill
Category: 'Facilitate thinking'
To be included in: 'Strategic Design' module

Visuals in general and sketching in particular can be used to communicate ideas or persuade others, but also as a key tool for thinking and facilitating discussion. This can help people in a workshop negotiate and share meaning about the problem and its possible solutions.

Watch the following study case: **The Butterfly Diagram**

The two designers use a visual sketch to help explain an idea, and create a basis for discussion. The sketch is drawn gradually to follow the conversation step by step. See this as an example of a low-fidelity sketch used to discuss and communicate different ideas among the group members.

1. Choose a business model from one of the two collection models used in class.
2. Create a low-fidelity sketch to visualize the model. You will use this visualization later on to explain the model in a co-design workshop.
3. Get together with your group members. Each one of you should now sketch your models for the others.
4. Discuss: What do you understand from each other's models? Give visual feedback on how things could be presented in a different way.

How can the brief be used in the context of SDGs? (an example):

How can the '**Facilitate thinking**' principle be used in the context of **SDG 2 (Zero hunger)**? Modify point 2: Choose one food-distribution system. Create a low-fidelity sketch to visualize it.

4.4.2 Further recommendations for future development

The following recommendations are not a direct consequence of the research questions, but rather additional reflections that arose during the process. They are based on stakeholder feedback as well as further reflection, and are articulated here for their further consideration.

Content

Adding Process as another focus area

Visual Design was traditionally understood as a finishing touch to some product or process, with a focus on aesthetic form-making. This role is now expanding by addressing wicked problems which make the process an end into itself. Thus, Visual Designers need to be equipped with the relevant tools and mindsets in order to contribute to a successful process (such relevant principles can be found in the sections 'Mediating complexity' and 'Cooperating with others' mentioned earlier, see Section 4.3.1). A way to enhance the context of the process is to use visual skills, mostly used for the development of an 'end-product', in other steps of the process such as research, pitches, and group work.

Imagining the future

Visual Design often strives to 'capture the moment' and create a contemporary representation of the present. However, to support a positive change in the way we live, visual tools are also required to negotiate and imagine a preferred future (as mentioned under the category 'Shaping the narrative', in Section 4.3.1).

Connecting the personal and the collective

Many assignments given to the students are centred on their personal experience and point of view. Connecting the personal to a larger context is likely to help develop their 'systems thinking'.

The role of Design

Keeping an open discussion

We live in times when the role of Design is changing dramatically. This is evoking many questions and uncertainties both in the Design community and in Design Schools. An open discussion about this issue can help students better understand why they are studying certain things and not others. Such a discussion can also help align expectations between the students and the school.

Defining students' capabilities

Due to the rapid changes in the role of Design, potential clients and partners often harbour an insufficient idea of what can designers do and what is, or could be, their role in the process (Frascara 2020). Thus, a brief given to the students by a client is likely to reinforce the traditional role of Design rather than allow them to acquire new relevant skills. This also impacts the students' own perspective about their roles as designers.

Teaching

Tracking the work

Design projects often end up when deliverables are handed out to the client. However, it would often be beneficial for the students to be able to follow their own work further, get real feedback and see people's responses. *"It is only during the implementation phases that the reality of the world imposes itself most strongly, requiring revisiting and changing many design decisions"* (Meyers et. al. 2020).

Connecting the subject to Visual Design

New students thrown into interdisciplinary courses often find it difficult to understand where these are positioned in relevance to their own discipline, and what connection do they have with their education. To keep them engaged, keeping a link between the wider context and their specific line of study is essential. One way of doing so is to clarify this connection explicitly. Another way is to use references from their own core discipline.

Broadening the discourse

Working in multi-disciplinary teams within the context of 'wicked problems', involves conversations which go beyond the normal disciplinary discourse. Studying in a trans-disciplinary context where experts from other fields relate to visual communication, and receiving critiques from non-designers as well as from other students, can better prepare the students for such a reality.

Creating an 'expert bank'

Connecting with an external expert to enrich learning or establishing collaborations often depends on the teacher's own network, which is naturally limited. Creating an 'expert bank' in the program can help students and teachers reach and connect with the most relevant people.

Connecting theory and practice

Theory and practice are traditionally taught by different teachers in separated contexts. Bringing them together can enrich practice while also making theory more relevant.

Timing

There is no better time than now

The COVID-19 crisis brought us to a unique moment in time where it is clear that sustaining our future will require radical changes in the way we live. This is true for many aspects of our lives, and Design is no exception. As mentioned by Klein, changes that seemed to be too radical just a short while ago are now suddenly perceived as essential. This creates an opportunity to question fundamental assumptions and discuss what the future may be like.

4.5 Reflection on the Design process

The original intention of this project was to work co-creatively with stakeholders to develop a response to the research question. The aim was not simply to deliver a final report to KADK, but rather to engage the stakeholders in a meaningful process that would allow them to create ownership from their side, support the learning process and get to the best possible result. A significant effort was thus made to engage the stakeholders with the project, keep them updated in the process and create open communication based on transparency and trust. As mentioned earlier, it was mostly the shared location that made this possible.

This intention was fundamentally challenged by the COVID-19 crisis. Once the universities were locked down, unmediated personal interaction was prevented. Even though the research question remained unchanged, what had been a DESIGN PROJECT became a PROJECT ABOUT DESIGN, at least to a certain extent. The very basics of design work – fast prototyping, testing and iterating – became difficult to execute, and personal interactions were hard to maintain. In addition, the tangible and visual elements that were used as boundary objects (such as rapidly-executed sketches, visual walls and low-fidelity figures) were not able to be used. A user-centred approach replaced co-design, and theory replaced some of the work that was planned to be done by practice. It is therefore reasonable to assume that the final outcome of the project was affected by these changes.

CHAPTER 5:

DISCUSSION AND CONCLUSION

Throughout this thesis, several theoretical concepts, as well as a practical case study, were presented. The combination of the two had provided a conceptual grounding for addressing the research question. Different issues of interest in regard to that question were discussed in previous chapters. This chapter points out the unique contribution of this research in regard to the field and suggests potential directions for future research.

5.1 Discussion

The basic hypothesis behind this work is that Visual Designers can address Sustainability within their practice. The ability to carry this out requires both an awareness of how Visual Design skills can be used, and the know-how to apply them in this context. It is the author's viewpoint that this should be taught from the very start of Design Education.

The goal of this research was therefore to define the principles that Visual Design students need to be taught for them to address Sustainability as part of their professional practice.

Process and methodology

This thesis uses the framework of an exploratory Design research (Stickdorn et. al. 2018). Thus, a significant part was dedicated to defining the right problem, mostly by means of stakeholder interviews. Desktop research, experts' interviews and prototyping were all used to develop the solution. Even though this is a common methodology within the field of Service Design, which set the ground for this thesis, it is uncommon within the context of Design Education.

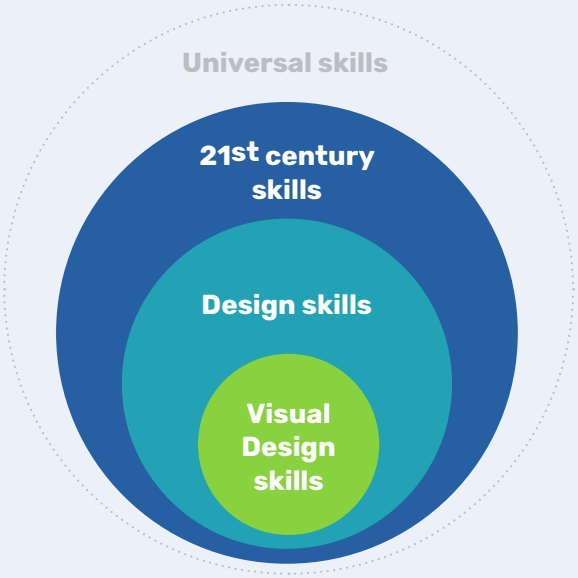
A significant part of the literature in the field of Design Education, which was the main context of this research, is self-reflection of experts on their own teaching experience. See for example Collina et. al. (2017), Clune (2014), Voûte et. al. (2020), Kamille et. al. (2016), Emans et. al. (2019) and Micklethwaite et. al. (2017), all mentioned in this work. Thus, the insights and recommendations that these papers generate are mostly inductive. Even though an inductive approach has the advantage of being concrete and fact-based, it implies a subjective bias and carries the risk of being less suitable when the context changes.

The author of this thesis, on the other hand, is neither an expert in Sustainability nor in Design Education, and therefore the results are not based on her own experience but rather on expert knowledge that was gathered and curated throughout the research. This implies a deductive approach based on multiple experts' perspectives that were synthesized into a broader picture.

Results

This research suggests that for Visual Design students to address Sustainability, their education should focus on the following categories: Questioning the Assumptions, Applying Systems Thinking, Cooperating with Others, Working for the Long-term, Re-thinking Resources, Shaping the Narrative and Mediating Complexity (Figure 29). These categories were clustered into three groups: 21st century skills, Design skills and Visual Design skills that are brought together in 'The Onion Model' (Figure 42). This model was developed as a strategic tool, to reinforce further development of Sustainability as a framework in Design Education and help

prioritize the implementation process. At the same time, each category was unfolded into applicable principles that can instantly be incorporated and embedded by teachers in existing classes (Figure 47).



QUESTIONING THE ASSUMPTIONS

- Question the 'making'
- Imagine alternatives
- Respect what's already there
- Challenge the language

APPLYING SYSTEMS THINKING

- Look at the invisible
- 10% - 90%
- Consider values and structures
- Re-think the brief
- Evaluate the work by using various perspectives

COOPERATING WITH OTHERS

- Consider people's agency
- Involve the community you design for
- Facilitate dialogues
- Create conversation prompts
- Examine needs, not symptoms
- Work outside the classroom

WORKING FOR THE LONG-TERM

- Think forward
- Extend life
- Shift focus from reactive problem-solving to co-creating the future
- Work towards a slow design
- Reuse
- Resilience
- Re-define the problem

RE-THINKING RESOURCES

- Look back into history
- Think about the system
- Be energy efficient
- Create new aesthetics
- More from less

SHAPING THE NARRATIVE

- Frame
- Amplify weak signals
- Connect actions to outcomes
- Imagine
- Entertain

MEDIATING COMPLEXITY

- Curate
- Make processes transparent
- Make the invisible visible
- Represent data visually
- Rearrange data
- Share and include
- Facilitate thinking

Figure 47: An overview of the solution

Various suggestions for skills that can be developed by Visual Designers to address Sustainability as a complex issue can be found in the literature. However, these suggestions often relate to specific professional aspects, rather than to a complete toolset. Thus, Manzini (2015) relates to the way that designing for visibility can make complex problems more accessible by mapping, amplifying, creating stories and building scenarios, Ciuccarelli (2008) suggests how designer's awareness can be improved through the use of diagrams to address complexity, Jedlička et. al. (2018) provide examples for how can product, print, packaging, and Digital Design use systems thinking methodologies and tools to contribute to Sustainability, Neiman (2018) shows how to use visualization to apply behavioural change, Valescchi et. al. (2010) point out the potentialities of visualization in the context of data and structures of complex social phenomena, Wrights et. al. (2018) write about the importance of systems thinking when it comes to Sustainability in Design, and Shehabi et. al (2019) elaborate the environmental impact of data consumption.

The reverse approach provides for reflection, followed occasionally by general recommendations, but this may be too general to be directly applied. Within the area of Design Education, Meyers et. al. (2020) make a general observation regarding the future of the field to 'Lay out the path for further work', Swanson (2020) avoids any recommendations at all since he believes they will necessarily be too general, and Frascara (2020) points out some patterns emerging from his interviews with Design educators, but avoids forming any concrete insights. The same approach can be found in the field of sustainability where Steves et. al. (2018) generally propose a new set of 'R's for designers to strive towards, DeLaure (2018) explores general ways of using visual rhetoric and persuasion, and Akama et. al. (2014) map six spheres of Sustainability that need to be connected.

The solution that was formulated in this project includes both a holistic framework that addresses a broader context, and applicable principles that can be instantly implemented in existing classes. It contributes to the framework of Sustainability in Visual Design Education by curating and arranging existing knowledge into a single framework that relates specifically to Visual Design. The solution can be used both by teachers to develop their courses – as mentioned by the Head of the bachelor's degree program during the co-creative sessions, the principles can be immediately applied in various courses as a series of workshops – and by management to mediate complexity and support discussion. As mentioned by the Head of the Institute of Visual Design, the 'Onion Model' can also be used for strategic purposes, as a tool for constructing the study program to address future needs.

In this sense, this work shares a similar approach with the work of Redström (2020) which offers a series of conceptual tools, diagrams and figures, enabling the framing and definition of design programs for education and research in the context of Design and complexity. Principles for Sustainability in Graphic Design are also defined in the work of Claver Fine (2016). However, Claver Fine does not relate to the context of the changes in the paradigm of Design, which is the framework of this thesis, but rather chooses to tackle areas of Graphic Design such as packaging, message and space, rather than skills that can be applied in different contexts.

This work points at the expanding role of Visual Design – from a discipline focusing on the end-product, towards a discipline supporting processes. It emphasizes the ability of Visual Design to mediate complexity, support communication and clarify complicated matters. This approach also guided the academic research in this work. The author aimed to use her skills as a Visual Designer to tackle a complex field and make it more accessible and comprehensible using visual tools and mindset.

The call for a change in traditional Design Education is often heard. Thus, Rodgers et. al. (2013) suggest to shifting the focus in Design schools from being 'discipline-based' to becoming 'issue- or project-based' (like in AAU), Nardi (2019) calls for developing a post-growth politics as an alternative to neoliberalism, and the framework of Transition Design requires a different kind of economy (Kossoff et. al. 2015). However, such radical suggestions are not feasible in all contexts. The results of this work allow gradual change to be implemented according to the system's capacity.

It is often the case that Design Education programs address Sustainability exclusively at a master's degree level. This is the case with most of the programs which were mentioned in Section 2.2.2. The level of education presupposes the existence of professional skills among the students (mentioned earlier as 'toolbox'), that could be further developed within the specific context of Sustainability ('thematic classes'). This work suggests applicable principles that can be used in courses from both categories and is therefore relevant also for bachelor level education.

Limitations

Three main limitations were identified in this research:

1. This project focuses on the classroom level. However, throughout the prototyping phase it was noted by stakeholders that addressing content only at this level is not sufficient, and further changes need to be made in the study program and curriculum to fully address the challenge. It is this writer's contention that a higher degree of engagement with the stakeholders, meaning more prototyping and iterations, could have led to a more concrete development of the results, which could have resulted in designing more briefs, assignments and lectures to be used by the teachers.
2. The choice of whether to ask 'What can we teach Visual Design students' rather than 'How to teach Visual Design students', set the focus of this project on content rather than on pedagogy. However, to fully address Sustainability as a wicked problem and match emerging standards within Design in general, addressing both categories is required. Such a focus can be found in the work of Scupelli (2018).
3. This project is tightly connected to emerging changes in the field of Design. It is based on the desire to innovate by addressing future needs, rather than by duplicating conventions

from the past. However, since the future is unpredictable and changes are rapid, this work therefore assumes that the solution will need to be updated accordingly as time goes by.

Future potential

This research can be further developed in various directions, both academic and non-academic. Some of these, such as addressing pedagogy and addressing the systemic level, are directly connected to the limitations presented above. However, several other directions are suggested below:

Visual Design

1. The applicable principles could be further developed into a catalog that will include various examples of potential applications (such as the examples given in Chapter 4), to inspire the work of teachers, students and Visual Designers.
2. Based on the applicable principles, more briefs and assignments (such as the examples in Chapter 4) can be developed to be used by teachers.

Design Education

Continuing research can use the 'Onion Model' not only as a framework in Visual Design, but also in other fields of Design. Such research can define what could be the core skills (the inner circle) according to the specific discipline and suggest how each skill can be relevant to it. For example: using the model in Fashion Design will keep the skills: 'Questioning the assumptions', 'Applying systems thinking', 'Cooperating with others', 'Working for the long-term' and 'Re-thinking resources' and will interpret them according to the specific needs of the Fashion Design discipline. The skills in the central circle (currently 'Shaping the narrative' and 'Mediating complexity') will be replaced by skills which are specifically relevant for Fashion Design. Using the same process for all study areas at the Design school can support the building of the study program, by defining what could be taught as a shared module, and what should be considered an exclusive expertise.

Industry

Among other things, this research defines the contribution of Visual Design to a contemporary design process. Such an understanding is sometimes lacking among clients, since the industry often has an outdated perception regarding the designer's role and abilities. Even though this perception has changed significantly due to the strong influence of User Experience, Visual Design is still often involved only towards the end of a process, and is seen as responsible only for aesthetics and persuasion, rather than being a part of the process from the very beginning.

Professionals who work with designers can therefore use the principles listed in this research to be better aware of how and for what needs they can use Design to fulfill its full potential. At the same time, Design consultancies, which often respond to clients' demands, can use the principles as guidelines to strengthen their capacities within the field of Visual Design, thereby expanding the services they are able to provide to their clients.

5.2 Conclusions

To adequately address Sustainability in Visual Design Education, students need to learn seven relevant areas that were defined in this research.

This work presents a unique approach by working simultaneously on two levels: It turns experts' knowledge into applicable principles that can be instantly implemented in an existing context, and at the same time groups them into a holistic model that can be used strategically.

This research contributes to the field by bringing together a broad scope of knowledge from both Design Education and Design for Sustainability, thus creating a comprehensive and sense-making framework to embrace the complexity. Even though it was designed according to the specific needs of Visual Design Education, the overall approach developed in this work has the potential to be used in other areas of Design Education as well.

CHAPTER 6

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APPENDICES

1. Slides from the kick-off presentation
2. Kick-off meeting – recap
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4. Interview with Martin Sønderlev Christensen, Head of the institute of Visual Design, KADK
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22. Product report

Appendix 1 - Slides from the kickoff-meeting

Sustainability in Visual Design Education

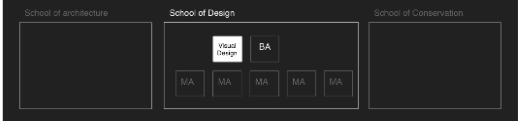
Kick off meeting
KADK 6.2.2020

Goals for the meeting:

1. Project's scope
2. The process
3. Time table
4. The participants
5. Expectations and deliverables

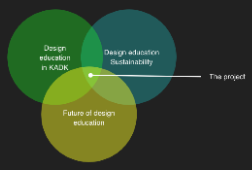
How May We
Make the educational program
more sustainability oriented?

The scope

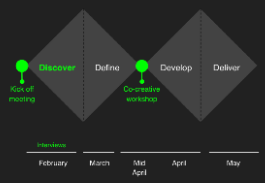


1. Develop tools and ideas for and with the teachers - how to approach sustainability in their classes
2. Develop an overall framework for and with the program - how to include sustainability in the curriculum

Areas of research



The process



Participants

1. Teachers
2. Students
3. Ex-students
4. Management

Appendix 2 - Meeting recap 6/2/2020

1. Project scop+workshop:

The project will last 4 months. It will include desktop research and interviews to gain insights about sustainability in design education at KADK and other places. A co-creative workshop will be held in the middle of April in order to present the insights, get feedback and develop initial ideas of how to implement the findings. Such a workshop could be a sensitive matter and we need to think in advanced how to use it as an opportunity for collaboration around sustainability.

Tine+Hadas: Set a date for a 3 hours workshop+invite participants

2. Interview:

The interviews will be held through February (preferably) and will last around 30 min. each.

KADK's staff: Mathilde (through Martin)
Visual design's staff: Martin, Tine, Anna (I will schedule with the three of you) , Cecilia (through Anna), Alessandro (through Tine)
Visual design students: 4 students - 2 each year: visual design+gaming (through Tine)
Ex-students: I would like to interview around 3 people that graduated over the past 5 years and are now on the job market. Would you be able to give me some names please?

Other people to consider: Fleming and Jeppe
If possible, I'd like to interview everyone that will participate in the workshop.

Hadas: Send Tine and Anna an introduction email.

3. Outcome:

1. Martin: to get an overview on the field in order to inform KADK's work, get to know what happen in other places and hear the student's perspective - what other ideas do they have and what do they want.
2. To develop ideas around how to use the 'visual communication weapon' to support sustainability (other than creating nudging campaigns).

4. Other matters:

To check out Linnaeus university in Sweden (Hadas).

Appendix 3 - Interview with Mathilde Aggebo

What is you over all purpose at KADK?

We educate designers at the highest level in product and visual design. We also have craft in Bornholm with glass and ceramics. The overall purpose is to develop knowledge and educate designers for the society and for the future. Every time we have to design the newest knowledge so the core of the school and the education is off course the artistic approach and the form and so on – that's our history and that's our 'liaison to operate' and in addition to that we also have an academic part where the students do research and we also educate within the common fields of design so that means both the artistic methods and also the design strategy methods – history, theory and among this we also have design ethics and sustainability because as part of the KADK strategy we are going to be a part of changing the world to a more sustainable place. So that is a part of our strategy. In 2016 we decided to work with the SDG's as part of our strategy and in 2019 we added them – it's part of the board following how are we doing. And that's both in the way we are going to develop our campus and behave in the campus but most of all in our research and education and such.

How does it going to affect the way you are going to develop the campus in the future?

The way we are running our place here – we are going to make some changes because we are going to be together here in another way anyway, so looking in how can we make the campus more sustainable and act more sustainable physically in the decisions that we make. It's very complex because everything we are doing is a choice so how can we make it more sustainable choice. FX: Right now, everybody has their own studio and desk. That's a lot of square meter which is a resource – are we using them in the right way? Are we optimizing enough? We have auditoriums which are not used from 15 until 9 – it's resources. How can we think smart about that? How can we use that even more because it cost – you need to hit them up and do whatever – this was one example. Another example is how can we be much better in recycle the materials at the campus, and turn of the light – all this daily things in a way- it is not KADK as such that is going to make a change in the world but it is also a way to educate or form people that we also have values about sustainable behavior in our studies. We just have a new call out of the cantina where we are demanding ecological food and vegetarian food etc. so we are also pushing to the behavior all the time. That is rather new that we are going in this path because we need to do it in a dissent way and have some resources elocuted. This is one part and our students are very much aware of that because they say we are being thought to work sustainable with design but what about the campus. That's cool, I really like that. We have this group KADK climate – they are pretty cool. When it's a big school like this it takes some time to make the turnaround for all of us. It's demanding from the school and from the stuff and from the students. It needs to be a common decision and that's actually what we want to do. That's the daily life. What is more impact we can give in the future is throughout the education and our research so we have design ethic and sustainability embedded in the education, we have a module working with that rather early in the study so the students are getting a mindset about it. We are also using the SDG's in the last year in the task that we are giving for the home assignment that you are going to apply for education and this year it's about ecosystems so how could you think in a bigger system – system wise: material, behavior or whatever so already before the students enter the school we ask them to relate to sustainable agenda.

Why is it important for you to do it before they even start the school?

Because we would like them to relate and consider the position in the sustainable agenda and such. When we look at the big picture I can't imagen we are sending out designers without the newest knowledge within the field of sustainability in the fields they are working with so if you are a game designer you should be aware about the tools that you have to seduce somebody – are they only going to use guns and shoot each other bla bla one agenda – what are you using your power to. In that way I can't say what they should do but I can ask them to consider. Our position here is to present knowledge and discuss it and make the students aware of the possibilities that they have and the responsibility that they have. Discuss that throughout the study so in that way I don't have an answer, but it needs to be part of the discussion and they need to have knowledge about what their possibilities are.

Does the module about sustainability and design ethics goes through all the education here at the same time?

Yes, it is a part of the cross disciplinary education, so they have some lectures and then they go out to the program and go with the themes out there, so the fashion and textile designers do it in one way and graphic designers do it in another way.

Is that something that is being presented at the beginning of the studies and they are expected to work with it later on or is it an iteration?

It is being presented early in the studies and then the programs – it is presented again in another way. This course is in the fourth semester and then in the third year before the exam they also have a more theoretic course about design and society with a more philosophical approach, before it's more a practical approach tools based.

What is the biggest challenge or constrain in your opinion working with this context of sustainability?

I think that the biggest challenge is that are so many ways to do it. The biggest task is working with it in so many different ways. Now in the field of design we are very much in a shift of paradigm where we have been working very much in the 50-100 years within the product or specific solution of designers, now we see that designers are also need to be aware of the service and the system. FX: if you are a fashion designer it's very good that your grades – you can make beautiful garments and textile recycling bla bla whatever it is, design that can last for a long time but you also need to be aware about the possibility in the service and how we can incorporate that and what is actually – we have a huge problem in the fashion design industry, it is actually more CO2 then the entire transport sector in DK, the export in fashion in DK is 8% because we have a lot of small exports, we are making more fashion that we are making pigs in DK, so off course we have many fashion designers that are into making beautiful garments and textiles but they also need to look up and be apart of how could we also think a new system? How can we make business of service instead of producing more products and so on. That is a big challenge for the fashion industry. For the

visual designer it's a challenge to make them understand that they have the communication power and tools to challenge and push the agenda's both within the solution but also in the bigger aspects of design.

Can you elaborate a bit more about the challenge of the shift in the paradigm? Do you see it as a different mindset we have to adjust to? Or is it about being able to work in a context of a system which is a challenge for itself? Where do you see it?

First of all, it's in the mindset and the way we think about design before even going into the field. There are some pre-defined decisions for what a design is for the new students. That is why the admission task is very important as well because it's setting the agenda for how it is that we work with design.

So, it's to align the expectations.

Exactly. And to start the formation – this is the field we are attacking with design. They need to be different as persons because it's not a sausage machine here because when we are doing game design we are not doing the same 12 game designers because they are going broadly but in the way they are going now broad they need to have the knowledge and the skills that they have some power and they need always to challenge the agendas and have a sustainable and design ethic perspective – what are they going to work for: Macdonald's or small game industry – they need to be aware about the…

So, for the students it's very much about the system and how to work within a system which is a challenge. What about KADK as an institution – is it the same? Is it the system or the shift? Where do you see the challenge?

It is also the shift because we also have great teachers that have been here for many years and have a more traditional approach to design and we have new people coming in so it is the balance between the great skills and experience from the old teachers and the new agenda – opening up new doors and discussions, so off course we also have this discussion with the stuff. And that is off course confusing us and also the students. I know that.

And you are not the only institution off course straggling with these matters…

Institutions, or educations and research we are developing all the time. That's part of our job to do that and all the time to be in the forefront of what is happening out there and having the discussions because we need to be prepared.

If you could have done anything to implement a more sustainable mindset in the studies here, without any constrains – political, financial etc. – what would it be?

Then I'd reorganize the campus to make it 100% sustainable of doing things because I think it is important the way that we behave as a model and we can be an experimentarium here how to do things. But these are our plans now, so we are moving that way it just take some time. And then we are merging the education. I don't think that sustainable is something very special. We have this say about Danish design

'form follows function', that's the Scandinavian way – I still see that as a core but now it's added on – but now, in any time, the most sustainable solution. We get new knowledge every day and we change our way of looking – what is the best sustainable solution and that's an openness to the playground that we have as designers and that is changing all the time because you get more and more knowledge so keeping an openness to that and keeping an open discussion to what is it that should be part of the curriculum, what is it that should be a part of the discussions and dialogues that we have about design all the time. So right now it is a little bit closed that we have environments that say's we need to do it like that because it's how we have been always been doing it and then I can knock on the board and say 'we need to expend' so I'm dreaming about an open environment where we can discuss it.

What do you mean by open environment?

Not have some already decided opinions what is it a designer should be able to do today. So, we need to have an open discussion about that all the time with the students and with the stuff and use the old stuff and so on so- but I think we have that it's just a long way on that. And last year we just had the first associate professor within design and sustainability. This is the first time we hired a lecture for this specific task and before that sustainability has been a little bit around so now we are building up our competences both in sustainability and also in new technology it's very linked together. I have this tour to all programs talking to them about what do they see in the future as demands for future designers for example about sustainability, and do we have the competences to give them the knowledge on the highest level or do we need to focus on that – do we need new people or should we be more focused on research and so on.

Who do you ask? The students? The staff members?

First the heads of programs because we need to be aware about the curriculum.

So, you go through all the programs and ask one by one how do they see the future?

Yes. And I ask the business how do they see the future and they say they need knowledge within sustainability. If you are a small-midsize company you don't necessarily have the competences unhouses how could we provide them with knowledge and designer competences, but still designers who are great in form and developing solutions and so on that can make products or solutions but also think in a systematic way. It is really complex.

Appendix 4 - Interview with Martin Sønderlev Christensen

What is your role?
My role is to make sure that we have an education, that people are employed and together with the head of programs to develop the directions of our education so at the end of the day I'm responsible for everything that is going on, and also develop our research capacity as well as some of the themes that are involved in that and secure we have funds for employing people. In charged of whatever goes on, there is also a big roll in delegating matters to the responsible personal.

The main purpose of our education is to bring people to employment in relevant sectors and perhaps design is also part of the problem and we talk about sustainability so one part is to get them into jobs but also in industries that are benefitting the world. We are educating people also to go out and maybe change things whenever they go whether they will be entrepreneurial on their own inside small or large companies as well as with job market we addressed so obviously graphic design needs increasingly to be more aware of the positive means that they can do a positive change, not go out and be in an add agency that sells oil or supports that… as well as the game and interaction design – how can they work with addiction to games – you have to be aware of that, so this is the sort of responsibility design comes with because it is a powerful tool to make people do something they didn't know they wanted to do or whatever. It's not my job to do that it will definitely be something to benchmark against to obviously wheatear students go, what they do after they graduate here is basically the whole point of having an education. It's my responsibility to make sure we have a clear picture of this and that we have kind of systems in place that ensure that we are doing the right thing for the right reasons and for the right people.

So one thing I hear from you is to make sure that people that educates here get jobs in the market

Sure

And the second is that they are working as a certain kind of agents for a positive change in the world.

Yeh, I mean we can't demand it but still methods and ethical considerations about what design is and also, we educate to the highest degree, so we also have BA and candidate PhD as well. There is a qualification network we need to apply to. Obviously our BA should be able to go out and do work in the industry, but with our candidate program we need to make new knowledge to change what design is through our students and also to have this partly underpinned by research and see research coming out of that so we can educate potential researches going into the field of academic research or artistic research.

Visual design is a very broad field. What do you focus at?

Due to our strong heritage and legacy – the school of design was put together from the school of architecture, also a lot of the graphic design in the school of architecture has been part of this institute so I think that the most important thing for visual design is sort of to understand the graphical, the visual impact and toolset to actually making people's life better wheatear it's wayfinding, reading or understanding context that betaine information to people to that and to use sort of aesthetical toolbox that our strong heritage comes with also to have deep knowledge into what works and what don't work, know the tradition you stand on, there are a lot of people that can do design. Everybody can do it and the toolset is being increasingly democratized and the transactions of doing design that were before in different systems are now in the computer so with that comes that design is now something that everyone does but what is our role then – to make design even better and to see what's – designers have a tendency to put things out in the world but maybe we should be more considered about what we actually put out in

the world and some of the skill set we try to underpin that with also knowing – so today it's not enough to know just about type setting and the gestalt laws of how things works on paper, (this is actually a theory how our mind and perception works so) increasingly moving from working with a screen as a raw material to think about – the actual raw material is our sensory system so how can we sort of maybe underpin that. That's a new contribution to visual communication, at least in a craft tradition, it is not something that you have been occupied with the evident part of design – is it great or isn't it great – that's more than an aesthetical judgment core, and the language that has attached with that is a one that has been developed obviously through many years and sometimes takes a stand with me being authorities because I've done a lot of design and then I can say what's good and what's bad, but let's also try to underpin that with methodologies that assert that this is actually working or not working.

For instance, the research we do in typeface legibility increasingly also include eye tracking or more natural science or cognitive science methods to take away the design from something that you do to something that you do for someone else and you need to be aware of what you do and potentially of how you do it.

I hear that you rely on traditional practices, especially those practices which are connected to the heritage of this school and context in correlation to architecture, wayfinding, type design etc. and I also heard you mentioning different tools and ways you can validate your design, decisions and choices

Beyond the "I like" and "Don't like". And design is also – it's a learning process within itself so the more design you've seen and talked about and done, you get a repertoire that is yours but also something that you'll be able to stire other people through and increasingly throw yourself out of the equation in a sense so that's not – my design is a design that is a process. I think that visual design increasingly also moves to, you could say, interaction design and how we interface with the world. I think graphic design or visual design can make a huge contribution by understanding how can we actually perceive things and solve – one of the focuses now is data visualization for instance so we are looking into a very complex amount of data in our societies increasingly governed or driven by data so that skill set which we have heritage of – visualization of data is not new, you can go back to whatever and see the dissemination of information through graphics has a long history but how can we use this classical trade into new era were data might be live or might be accessible in new ways they might also be contested because there is so much of it – are we looking at the right thing, are we being manipulated and so on and so forth. There are lots of new areas where it is standing on a tradition but moving into the new world, so here we can also contribute more to sustainability – you can think about the SDG goals, in itself it's like a resolution out of the UN but it is probably the most important graphical design work that has been done in the 21st century, to take this very complex issues and turn them into – give them an identity so people can sort of follow it, understand it and bowl it down into these 17 icons – in of itself it's just the power of graphical and visual design – that's right there. You couldn't imagine the SDG goals being such an important part of our society if that works hasn't been done.

Is it something that is emerging in your education – data visualization? Is it something that you stress more today then you used to do in the past?

Yes, we do. I don't think that many students come here and think that they are going to work with data visualization, they probably have more a dream to become graphic designers that do fonts and put up great posters or boos or whatever, that's all good and fine and something that we also support, but we also need to harness or shape this tool or this skill to be more. There is a demand as well, and we are also looking – less and less people are going to be in the details of making books as well as classical type of visual assignments but we will be working more with making changes and data visualization is just one area. There is huge opportunity for us to use our skills.

Which other changes do you see emerging in this field of visual communication? One thing you point out was moving from designing more traditional things like objects like books and posters towards more data visualization and managing information visually. Can you mention other things that you can see from your perspective?

I also mentioned interaction design – as understanding this connecting tissue between me and the world or people and the world, as well of new types of voice, gestures – how do we live with technology in the future when we are out of screens and books, which in of itself – type design is looking broad on our human history is a blip on – previously telling stories was more a communication form then writing them, so I think there is a re-embedding of actually very human way of interacting with the world, or getting information, having experience that goes beyond the type of mediums we have today which are very sort of short in our history, so what comes next is probably not more of this but different types of interfaces, explore this field in terms of how do we leave with all this – how do we live with all this kinds of technology and media. We have also realized now that we come to this saturation point of how much visual thing – we have a burning platform to think about a new form of communication. We can use design to make things but we can also use design as a method to address these problems differently, so obviously the book will persist - but it's not about making the book better, it's about re-thinking how we read, or how we get information or how we get experiences – that is the interesting question here as well as how does it fit better with new agenda like sustainability – we have come to be aware that this is something we as a world need to address.

So you actually broaden the context of the design action per se

Yes, and maybe that's the shift now that a lot of students are straggling with. We see this small move against generalization or academization of previously sort of crafts or arts tradition, but we can still use our deep knowledge about materiality and the work of the hand to a world which is more frictional and less materialized – the digital world. One of the most interesting things I've seen is Google's material design where they really got deep into what is a button on a screen. It is even wired there should be a button, but what are the properties of it and you can take it even further to think about new types of interaction forms.
What will be the kind of thing we would like to experience and be entertained by? How do we disseminate knowledge in new ways? It is tide also to human behavior so also behavioral design in a more mature version than nudging – put a sign here and people will throw their things in the bin. That's a crewed implemental application which is I understand that you need to do this and maybe if I'll make it fun you'll do it more, but there are more levels of behavioral design – how do we work as social individuals?

These, in my view, are very big matters comparing with very tangible things like how you shape a letter. How do you bring such big questions to the space of a classroom?

We had programs where we worked with a library in the master program, with understanding of how would the collections that libraries have today will be in the future. The role of the library in the future and I think we came up with – one thing is to bring real world problems – to sacrament these ideas that design is just something I do on a paper and give it to you – the role of designer to use that skill to understand and visualize and develop suggestions for future preferable solutions. Look more to real world problems, get involved with other people's problems, and try to go dipper to them then just the shell – let's make a campaign for something, to tackle these things much more deeply. In a real sense some of the old ways of thinking about form can be beneficial for leveraging how can we work with a problem. What I'm experiencing is how the students are actually able to – because they are skilled in form and craft to unleash whole new ideas – something that the libraries have been straggling with for many years, with producing a suggestion but also producing ways of understanding this in completely different way that is much more

tangible and at the same time proposing a lot of other things that you could take further. So the strength of design from a very classical sense is if it's able to shift from this idea that a design is really what's on the paper to the idea of what it's enabling people to do. This is powerful. To your question – how we bring this in – keep infusing real world problems, people, demands, but also to refer back and use design as critical and speculative things. It's also a way of thinking and talking about things. What I'd like to see more is not 'design thinking' that was just boiled down into this 3 steps methods but maybe design writing and reading were you us design - ridding and writing the world with design – on a high note. We are on the casts of changing the world and we need to do that, and design also needs to change to do that because we are part of the problem. If we continue to be in an end of a product and make it look nice and frame it – we need to be part of the whole process and we have to take more charged and to be critical but also to use our great skills to make it interesting to engage with – not necessary sell it.

You have mentioned two different approaches to be involved with these 'big questions': Real world problems and engaging with theory and bringing it to the practice of design.

Yes, theory and method. I don't know if you know Donald's Shirin theory about the reflective practitioner who is able both to be reflective when you do stuff during the process – an action and also reflecting on looking at yourself from the outside – the academic view – did I do this, why did I do it, what can others learn from it, this sort of idea about design just producing stuff, things and signs, we also produce knowledge, this is something we can become better in it ourselves – an academic level that we demand that people can do, not just by infusing more theory and giving more methods but really think about going back and forth between the material and reflecting on how do you do that. Maybe this is where you can also bring in ethics – should I do that? Are we doing it the right way as a group, are we doing something we are not putting technology in, should we not do that and reflecting on what you're doing rather then in what yours doing.

Is there a place in the program were these kinds of reflections have more space or is it the same thread that goes through all the courses?

One of the things which are core to the kind of design that we teach here is critique sessions and one of the things we are increasingly aware of is what's going on in these critiques and how often are they taking place and what form and what kind of feedback (rather then maybe you could put that on the left or 'I don't like black make it in white) but more why are we doing this how are we doing this to use that as a venue for critiquing and stirring the work with other factors then just 'it looks nice' or the swiss design paradigm. That's something we do in all levels.

How do you build this awareness? I hear that you are saying that one of the most important places to implement this way of thinking is in these mitting points between teachers and students were they get feedback for their work and I wonder – when a teacher comes here and she gives a feedback to a student, how does she knows which kind of feedback do you expect her to give?

That's a very good question and that's not something. We are not in power at what we want to do there. We leave it a lot up to people's own and maybe this is also kind of – critiquing is also bringing yourself to the table, you can't demand from everyone a Fuco analysis of a problem, so there are many different layers and some students are more receptive then others so there is always a balancing act but I thing that in general we need to be much more focused in what's going on in this. This is also were most of the students are moving forward when they are – I don't think we have a framework for it now that is sufficient so this is something we need to deffenetly look out in the future of design – how do we do this, when, why, maybe having more of fixed formats because sometimes it's – I'm busy so it looks nice so you just move forward with it so see you in a week. This is maybe not the quality we want to.

If you had any possible resources to approach this space, what would be the best scenario?

I think it will be interesting to do not just designer to designer conversation feedback because then its end's to be much more looking into form, the language of the things, aesthetics, but maybe bring other actors into this session. In some of our collaborations we bring in people from Rigs hospital and to have that there in dept understanding of the problem where it is. What we see now that design is everywhere but maybe designers should be able to bring other perspectives in and the school can be beneficial to have more collaborations with others – should this biochemistry person should be involved in that? Software developer? To be more collaborative. I'd love to be able to underpin that in the education. I think it's wrong, not wrong but natural, we have a thing that we work together with others to develop but that's also the problem in research in large that you get this self-confined spaces were people agreeing on this is the right way to do things and this is very important but then when it hits the world it may be not that good or that important so how do we get this sort of reality check that takes some balancing in especially if we want to work with these real world problems and tackle more problems for instance sustainability, saving the world. We have together with other disciplines.

What is the biggest constrain or challenge working in the context of sustainability?

I think it's the complexity of things. That's wat's really hard to fix. These are not just simple issues. You need to know much more about systems. One of the challenges is also maybe to move our very strong and proud tradition of design into a world where we need less design, or when design needs another role which is obviously within itself a change which is hard to do because it may not be what people want and there are factors and place where it's a profession that relies on it's own ideas what it does to uphold itself in the world where it Maybe we need to break it down and start all over and do something else. Maybe design is just an infant stage of a much larger discipline where we can actually use all this. I think design is an epistemology that combines a lot of things – we work with some real world problems, we engineer stuff, we use natural science methods to make materials work together, we think about how does it impacts the human lives, we are also social scientists, we also build on humanistic strength of thought to be more philosophical and critical about things and we also have a strain more artistic strategies and approaches so I think we can be a sort of a hub for all these things and therefore come up with other solutions that engineers and economist can't do within themselves. But that's really hard to deal with that complexity and to be able to take that role. I don't think about design as science, but it probably should be much more profound. There is a lot of focus on STEM education to deal with the problems but the arts and design is not part of that but I think we should be much more fluent and interdisciplinarity between fields. I think that a lot of our students are actually doing it in their master works. Their thesis works are a lot about not just making nice fonts but also making tackle – how does geography presents countries and how can we work in different ways with people in the field about design to help decisions. The complexity of the world is really hard to deal with. That's probably much more easy when you are biochemistry and just focus on finding that sort of sell – not to say that's not complex, that's real research but it's very simple didactive way of finding out problems whereas designers should have the ability to combine a lot of different data points, both qualitive and quantities to make up solutions. I don't see this is something that necessarily comes out of this place, I think this is something we can do our bit and I see that it's coming from other places and we'll all need to get our share. One of the problems is to do education really and we will probably need to think how we do that in the future. Is it going to be this kind of way of learning or should it be other ways of learnings? We have a generation that had been told that they can do everything, a least in the western world. Their parents have done everything for them, so they come here with a dream that we have to break down and they have not been pre-educated in the same way. We also see that some of the craft skills that you had previously at the ground school are not there yet and people come here to learn something that is very basic and we are like 'haven't you been playing with clay before? Or drown? So

the whole value chain - it infares on us and at the same time we have to differentiate ourselves so one of the things is – we are thinking how our deep heritage is something we can exchange for more valuable, meaningful or important stuff in the future.

When you say ‘differentiate ourselves’ you mean with other design schools?

Other design schools but also with ourselves – it’s imperative that we need to change and we do it all the time but maybe now there is a way more profound change happening otherwise I’ve been joking that there is only an ‘O’ lacking in KADK to make it ‘A kodak moment’ – there was this great company that had all the patent and the history of photography and they were not willing to exchange that for the real world because there were so many things changed around them. It was the most innovative company at one point but they were not able to see what happened beyond that narrow scope of what happened and they thought that was a strength and maybe we think the same about our very strong artistic and material and form giving, maybe that power should be harness in different ways.

Appendix 5 - Interview with Tine Kjølsen

The program's structure:
It's a 3 years program. The emphasis in the first year is the toolbox of design, both with analogue technics and digital technics. I wouldn't say that sustainability is a huge issue in the first year because the material is primarily in used is computers because the students use their macs/ pc's so it's something we address in how we use the materials that we do use but it's not very much addressed before we enters the second year. Then we have project collaborations with a broader job market and in that context fx. In the collaboration with Rigs hospital the students will be informed or asked to addressed what kind of materials will you use for this specific solution you are working with Is it a recycled paper, a portfolio that can be used by more than one patient, is it cleanable, recycled cart board So the use of specific materials, paints, folio to put on the wall – the material weather it's recycle or sustainable is addressed as something they have to be aware of and that goes for the fourth semester as well which is currently running.
At the third year they are more or less on their own – doing their bachelor project and going on internships. A lot of them, when they do their individual projects will address sustainability either from a campaign pov or a political pov or choice of materials pov or any other possible approach. When they do their bachelors they are working individually and being tutored once or twice a week.

1+2 semester – The toolbox. Designer toolbox on a meta-level and on a more specific level. That contains a series of small workshops in digital and analogue media. And then they have a short 3-4 weeks project were they assemble the tools they have been thought. At the first semester it is more analogue, and the second is more digital.
3+4 semester – The primary pedagogical content is working with real problems, people and context like the project with Rigs hospital where they also had to address a lot of ethical aspects because we worked with the department of oncology. FX you can't walk into a patient room and stick a microphone to their face and ask questions.
4 semester – they will be collaborating with more a museum like collaborating platform and it's primarily an exterior museum – Viking archeological museum. The focus then will be on storytelling, exhibition design, narratives, interface design, both argumented reality, games, etc.
4th – working individually because they have to prepper for the project.
3rd – working in groups also to train them working in groups when you need to collaborate and not always to put yourself in the front.
5th – individual project. They choose their project out of interest. Some of them will have a whole book filed with ideas from their study times and they will try and scale one of them and see if it can carry the BA project.

Ethical aspects – which tools do you provide the students to cope with them?
When we have the intro, the hospital addresses it. They all have to sign a secrecy document. They need to have a sensitive human ethical approach throughout the project – when they are user testing the projects when and where can they do it. Part of the continues guiding, it's not a course or a lecture but it's been addressed in the lectures that we had at the beginning – we had a designer from Triagonal which gave a lecture. They have been working with huge costumers in DK and abroad, they are used to work with wayfinding and way showing in sensitive environment, so this was addressed and discussed throughout the

project. One thing that was very clear was that it was very difficult for them to user test the projects because you can't ask people who are terminally ill how do they fill today – this is just not done. How then can they user test and in what circumstances? Many tests have been made with 'could be' patients and by approaching people that they know that had cancer who they could ask. When you have a personal relation to a user in this case it's a bit easier to approach them and ask for this.

So you addressed it by their first circle, the teachers who guided them and experts lectures.
Yes. Apart from that we have different elements in the study program. KDTU are common courses. The semester starts with a 3/6 weeks module. One of them addresses sustainability specifically (Else Skjod). So, they had a series of lectures in this module with Rigs hospital where they were informed about different aspects of sustainability for VD+ product design.

There are 5/6 shared courses that are running on semester 1-6.

Sustainability today
How else do you address sustainability in the current program rather than the sustainability module?
Sustainability as it is right now as a lot do with how we use our resources and how we recycle our waste. In recycling and reusing materials it's a huge issue in the textile and fashion department because the textile industry is very polluting but the graphic design area is not as itself very polluting except of packaging or campaigns but then you as a designer working with changing other people's way of behaving including your own. The game designers in the program are on the computer all the time – they don't have a physical output. We have a constant discussion in the program what is sustainability within this field. Is it something we address through games/ ai/ virtual reality. How do we do this? Because for ourselves we are not polluting enormously.

If you look at some statistics being online or streaming from Netflix or whatever is currently superseding the CO2 emission that airplanes do which is a big thing everybody is talking about, that we can't fly anymore because it's too polluting so you can say that every time I open my computer which is basically opened all the time like everybody else – that in itself is also a pollution factor, not in itself sustainable. But sustainability within the field of this bachelor program is mainly put out in terms of how we get other people to behave with the products that we produce because we don't pollute as such with ourselves. So, it's an ongoing discussion but the main climate scanners are in the other programs and they have been addressing if for a very long time.

How did they do it?
With what kind of wood do they work, where does the fabric comes from, how is it being produced, can it be reused over and over again?

-So very much from a material perspective.

Yes. Because growing material, transporting materials, orated into either wooden chair – the circular movement is being very much laid in the BA program of product design for the last at least 10 years or more. It's not new.

From your perspective – how did the awareness had changed along the years? How are students today approach sustainability comparing with the past?

The big movement have gone from just being sustainable to being circular and to look at end work with designs – multiple circular using of item. The awareness that you are not throwing things out and that you are using materials, so it doesn't end up in the water. That kind of awareness is very much at the forefront of the mindset of students particularly but also the stuff.

Is it something that the students are bringing up? And in which context?
I did a common course with them last year. One group ended up going into a big washing agency that is washing bed covers for hospitals, hotels, etc. and these are big industries which are climate sceners on a major level because they are using so much water and if they don't use organic materials, they will be polluting themselves. We had a discussion about that and then they went out and interviewed 3 major industries in this field and found out that they washed a shit for 30 times fx, they would through it out so they have a mountain of possible recyclable cotton materials so the students made an agreement with the industry and the re-used or re-maid material that can be reused from that.

So, the students were looking at the entire system and how does it work and pointed out what the problem is and looked for a solution.

There could be a number of solutions: people can start wash their own shits but the chose, instead of burning it, or using it a land field or whatever to reuse the shits.

At your opinion, what is the main constrain in Design education? Barriers, difficulties?
I'd say the lack of agility in the system/ society we live in because it takes a very long time to implement different patterns of existing. I can't be more specific because we are away over our heads. I don't think I can answer the question within the bachelor program, but I can answer the question on a systemic level above our educational institution.

What do you mean by 'lack of agility in the system'?
The fact that if we want to sort the trash in this school, FX, instead of throwing it in the same trash can it is something I've addressed for years now and nothing happens, and this is probably because it's not on an overall structural level. There is no interest to do anything about it or a lack of ability to do when you think about it or something further that I don't know. 'We can take our own medicine' as we say in Danish, and we don't. We could have had a totally organic food in our kantin but we don't. We could have sorted our trash in a much more systemic way than we do etc.

Do you think such change is more likely to come bottom up or top down?
If it come it will come bottom up and it will come from the students and they will demand it because it doesn't really work when I or somebody else talks about it.

I hear from different people that there is a generational change. Young people are more aware of climate issues and sustainability, they have demands, different pov, they see things differently. From the other hand the systems are big and slow but they still need to answer the student's needs to work more sustainably, so I think there is some kind of friction there. What is your idea about it? Is it possible to approach it?

I don't see a friction; I see a common interest. I think that if it needs to scale it will be a bottom up movement. We are working on the same agenda from different approaches because in my age I have some skills that the students don't have. I can cook from anything on an open fire if we need to start from scratch, I can saw and repair my stockings, which young people don't know how to do and if they have a whole in their sock they will throw it out instead of repairing it. This is not sustainable way of living. If 'the sheet hits the fan' and we have to start from scratch and not live with the benefits of a modern electronic digital world, then the young generation will very much be dependent on their parents and grandparents because they have the skills before the digital revolution.

If it was up to you and you could have done anything to promote sustainability in this program, what would it be?

It is difficult to address sustainability here because we don't have any polluting output. The current balance of the program is good because my main objective is to make sure that when the students exit the bachelor they are skilled in both levels horizontal and vertical and they know how to cope with the challenges that the work and life bits them. In that sense sustainability can and should be addressed all the way through the program as an awareness but they have them with them when they come. I don't think we can necessarily right now be more sustainable then we already are unless we push the agenda further and we take the students to this dialogue of what does it mean, but this dialogue comes out of some of the common courses where sustainability is being addressed very heavily because a lot of sustainability issues and content comes from the product filed so the references are very product oriented and that leaves our visual designers with a huge question mark in the forehead saying why, how does this relate to what I'm doing because I'm not polluting in wood or textile production. I'm in front of my computer making a game or visual campaign that will be online and that's not polluting. This is something we discuss all the way through, but it's very much put on the edge when they are in the sustainable course, because that whole subject is so strong in the product field this is also where all the references comes from. There is not a great deal of materials in the graphic design field or game design field. That may be something you can produce when you are done.

Appendix 6 - Interview with Alessandro Canossa (notes)

- Alessandro is teaching the first semester in game design, the third and part of the fourth. It's his first year in the program.
- The first semester is divided into 2 modules: The first is about experiencing materials and behavioral interaction where they start by designing a board game and then go to live action to focus on the relationship between actors. They call it MDA that stands for: Mechanical, dynamics and aesthetics. The second module is about the technological side where they study Unity, code and different software. The next module is about art direction building the aesthetics aspect of the game and they work in teams.
- On the MA the students have a course that's called 'transformational design' – the goal of 'transformational games' is to change the POV of the beholder. Example for these kinds of games are 'Sep. 12' that shows the causes of killing a terrorist, 'Darfur is dying' and a Cancer fighting game for kids who have cancer and getting a treatment. It's a simulation of a problem.
- The overall objective of the program is to develop skills for game and interaction design.
- There are three aspects of the studies: Interactive, visual and coding.
- The students learn how to create beautiful data sets. FX: when designing a bar chart one aspect is how would it look like and another one is the rules, the immaterial dynamics: what happens when you touch it, when and how. These are all elements that takes place inside the game's world. For things in relation to the reall world they have the 'transformational games' module in the MA.
- Many students are talking about sustainability and some of them build their projects around it. FX: a master project about food waste.
- He relays on the common core modules to touch sustainability because he doesn't have the time to approach it directly in his study program.
- He thinks that the teachers there approach it also from game design perspective because they asked him for references. He believes that in the future the 'professional' teachers will take part in the relevant lectures.
- It is mostly tackled in the transformational phase on the MA level
- He tries to make the students create less paper prototyping to prevent waste.
- He would have liked to make the students create a game about climate change if he would have had the time.
- They are working with a company and it was important to him that it will be a socially responsible client. He couldn't find anybody that is from the sustainable design field because that wasn't exist in his network, and then he chose an organization working with torchers.
- The technical specifications are minor. The power consumption is always the same and the data consumption is minimal. That doesn't have a big CO2 footprint.

Appendix 7 - Interview with Else Skjold

I have particular knowledge about theory of fashion, and I've worked across both in my research work and also in education. The last 5 years I've been mostly teaching in a master about design management which entails all sorts of perspectives how to work with design based methods and strategies or ways of thinking and seeing organizational work – in an organization or a company how is the organization structured and how do they actually work and how do they use design – could be services, products. I worked with large and mid-size companies in DK in my research work, so in terms of sustainability my departure is off course clothing so I took part in developing something called the wardrobe method which is about developing using empathy in the fashion business so it's going from deep user understanding to sustainable development. Because I've been placed for many years at the design school – I'm not a trained designer, I'm trained at the humanities, but because I worked in the design school I had a close focus on what is exactly is it that the materiality of design – how can it contribute when we talk about sustainable development. It can contribute a lot. I was co-affiliated in my PhD between CPH business school and DS Kolding, I was trained in the humanities so I know that a lot of the discussions around sustainability are going on in the humanities and social sciences – some of it is more on the business level' or the symbolic or communication level, but it doesn't go into the actual objects, and I think what you can really do with practitioners is that you can make these prototypes or tests for what should it look like or what is it which is a huge contribution.

Can you give me an example?

This is from my research work. I worked with a very contested field, sustainability and fur, for 5 years, which had so many levels of complexity. Mainly because a lot of people will say sustainability and fur is like health and cigarettes. But that made it very interesting at my part. And based on the insights we had more theoretical understandings we gained, the framework of how we solve the whole case, we made some design briefs and hired some designers to try and develop actual design based on all this research knowledge. And what we said was that we had a brief that was quite clear but within this framework you take all your design choices. And what this gave – the designers and the company were able to have these artifacts afterwards and say exactly in this item where is the sustainability. How does it look like, what kind of sustainability approaches are applied and why are they good for the environment for example? So take something which is so complex, manifested – sustainability is basically about everything. So this ability that designers have to put that into a design proposal in material and shape is extremely powerful, because the rest of us we are struggle with even understanding what it is. So to get artifacts that work like boundary objects, so you could discuss what's actually going on between designers, stakeholders, company, users, whatever stakeholders are around the objects and the case, that is not the same when you use models or communication strategy because that's words and models and design kind of goes directly to our senses. The communication of this company would say one thing but the design they showed told another story. So how could they work together with the brands and do design strategies that were aligned with where they wanted to go. FX: the said fur is slow fashion, fur is about craftsmanship and user understanding of these things and all the images they showed were young fashion models dressed in absurdly wild cotter in screaming colors. Which is about vanity and not taking care of the planet, but about consuming and supporting that fashion system which is all that is wrong. So, they were telling two completely opposite

story in their design work then they did the communication because they under acknowledged the importance of design.

What we also struggle in design education is that we send out designers to work for mangers and communication unites, CEO's who don't understand the actual value of the design we've made. That means that in a lot of companies when you work with strategic design this issue that their communication says one thing and their product line tells another thing like a kitchen company that says that they are all about Scandinavian product and they line of products are MDF with laminate which is so not about that. And we need to educate designers to be able to both do that, show that if you want to go there, I'll show you what product corelates to that. When you talk about sustainability it's about so many hazy complicated matters but if you don't have products that attract people that doesn't matter. So we can talk about circular business models and upcycling and things for here to the moon and that will never happen unless you have designers that can make it attractive that anybody want to were it, for example.

<u>You talk about two kinds of products the company is making, the product itself – the fur fx, and the communication and the gap between them. How do you see this gap a matter of sustainability rather then communication? When does sustainability comes into the picture?</u>

When I was asked to go back to education here and do this cross ethic course about design, ethics and sustainability, what I did was to say it should be applied to the project work so they all worked with design challenges where they had to deliver some kind of product at the end, so I'd instead of make it more simple I'd make it as complex as I could, saying sustainability is really a massy area. It's really complex to understand. It's across the entire value chain, it's not only about materials, it's about creating better lings about consumption and production. It's about securing there is a minimum amount of over production that becomes waste, it's about sending waste back into the product flow and how can you do that without actually contribute to the environment without just greenwashing. I started the course by saying 'now I'll give you a shock, I hope you walk out of this door and you fill that this is so complex you will never be able to manage and then I promise you'll work on how can you as designers can contribute as we go along. And this is about understanding what the role of designers is, how can they contribute, where other parties can't. FX: how could product designers contribute to sustainability when the main problem is that we have too many problems? So, if we make this little play with the idea that we shouldn't make any new products in the world, what is your role as designers? There are plenty of materials laying around and plenty of products, but if you just take products that are there and you circulate them that's about business models, not necessarily about design, so how can you – and then what they came up with was they did concepts like – we envision a place with a huge pile of garments, some are multi-function, some are multi-gender, some multui cultural and you can rent them so you don't have to buy and made examples of that. Another group went to a sorting place for textile waste and were really shocked because so many tones of textile are discarded so their concept was to color sort these nice materials and make them into new fabrics which are stitched together because who said that new fabrics needs to be streat? Why can't it be patchwork? That was about saying through design that it could look different. And through this different look it's also a completely different idea about what's the role of design to sustainable future.

<u>So you helped the students to shift the Centre from the product to something wider</u>

And what I think is mostly important was to help them navigate and help them find their own position and their own strength. As designers you all have particular interest and material, you develop a kind of a language because we are human and that's very important and should not be underestimated. And the function of that is that you'll be able to make new suggestions to how should we interact with design at all in a more sustainable way because today the new products lot's of them are being intrigued with new chemicals to look and smell new but if you then propose as a designer that this aesthetics is not a nice aesthetics but there is a whole other design language that is much more inter related to the concept of sustainability which is not using so much new crap.

So the direction you are pointing out at is to create new aesthetics that goes hand in hand with new way of thinking

New aesthetics, new material language, new functionalities. New ways of perceiving – I want a new chair or new dress, whatever. Both with the product students and also with the visual communication students was human, off course planet centered, but also human centered in the sense that something is wrong in the balance for the planet and for us because we are encouraged to think that our whole life is about consumption – working and buying is the optimal idea of life. We are even being told by politicians that we should buy stuff to support the economy. We need to discuss that through our own approach which is show casing. Sustainability is so difficult to understand that we need tactile and visual examples that could be computer interfaces, apps, products, houses. In order to understand we need to see how it looks like, what does it fill like, what should we do with that.

Are these prototypes of another way of thinking about these matters?

Yes. But when we have a prototype, something to discuss, that can also be a prototype for a game or VC, then it's much easier to discuss because it becomes tangible. I think that when we work with sustainability this way of taking something extremely complex and make it tangible and hands on is so important and so underestimated.

I hear that you relate to 2 skills designers can bring to the picture: one is to imagine how alternative realities could look like – not relied on consumption, and the second is more about the ability to create the object itself – the craft.

If we are teaching design students theories about sustainability and they don't get to cook that into form and materials – then we had lost them. They will just be bad academics.

Can you think about example from visual design?

I was working with user empathy. This course had a full semester project about children with cancer, so that was about developing some kind of an app or a game that could help this situation. They couldn't get to the children so I had to help them to figure out how can we use some of this design anthropology methods to gain some insights who is it that we can help – there are different kinds of personas and how

can we do it through game prototypes, which is ore about SDG 3 -health and well-being which is also sustainability.

How does the course about sustainability being structured?

There ere 5 meetings, one day each. They all started with a lecture by me with 2 articles per time. First, I came in and gave them this shock, then we had a design consultant that had been working for 30 years so he gave actual examples from specific brands – what did he do and what did the product looked like which they liked. Not only ideas but also stuff. It was concrete. Then they had time about user studies and applying the insights to design. One thing is to study users. You learn it in social science but there you don't make stuff and prototypes, so how can we take these insights and transfer them?
Then they had one time of mapping the value chain and the user journey. What kind of persons, organizations and stake holders can help them to make the project happening? And then how do I get in touch with someone that can help me? Because I wanted to teach them that you can't do sustainability alone. It's simply too complex. Maybe you need some technical help, access, help for materials, coadding etc. Who can help me, how can I get to them and how can I approach them? Very basic but extremely necessary – that was a huge task, just to write email or call someone. The last time was about health and wellbeing when we had external lecture who worked with hospitals and cities and climate and teaching for kids so he came and gave examples of how did he work himself with this area. Alongside that they had their project so the visual communication students Had the hospital. The furniture had the music conservatory and the fashion worked with fashion designer for the whole semester. So in this place they got ideas and test their projects. In a way it's very complex but it's to take it right down to the actual project were they do, and right down to the material level of what they do because otherwise it's not relevant for a design school. Even us who work with sustainability have difficulties and we haven't solved it. We are on the journey.
In this school its 3-4 years they have the strategy with the SDG's. the thing with the SDG's is they are sound easy to work with but they are not. They are meant as tools for companies to tick a box - now we work with this and this but to translate that into teaching and design work is actually quite difficult.
Water – we want to save the water is not a design brief. A design brief will go much dipper into aspects of saving the water. You will need to see what, were, who, why, which is mostly the problem for companies giving up saying Ok we buy something good for the water because it becomes to complex. In this course I took goal no. 12 – responsible consumption and production and goal no 17 which is around partnerships across the globe – connecting developed countries with so called underdeveloped countries but you need how to collaborate at all and start somewhere. If they don't know how to collaborate with other types of specialists and knowledge partners, they won't be able to work with someone from another part of the world. We start in a small scale, but they learn a mindset. They are not an isolated island anymore. Some generations back design schools were about this isolated design genius that was a kind of an artist start especially in the 90's when they out sourced the whole production, the designer was the celebrity and someone a long way from here did the actual work, and that role is not relevant any more. We cannot responsibly make an education that is about this type of design role. That's not to say that designers can't be artistic or extremely skilled but it's about what kind of role do they have and they need to understand what is it and how can they connect with others, because you can't do a sustainability work without

Interview with First-year Visual Design students

What do you study at the moment?
We started with a module for all the programs (also furniture and fashion) about rhetorical way of communication in the context of design. More like written and video ways of making stories and narratives. We got texts to read and we have lectures. We do a video to present our magical object and we have to explain why this object is magical for us. Phenomenology, presentation and video editing. Now we work in groups and we present what a world without design be like in video reflecting on the subject. We also have theoretical stuff – Aristotelism, drama, communication. And lectures how to do a pitch and communicate. It's not story telling but telling a story.

What is the difference?

Story telling is more marketing wise when you try to connect something to something else while telling a story is when you have a start, a middle and an end and a story structure (tragedy, drama, comedy).

I went to another school before this (KEA) which was more marketing driven and I had more marketing courses – how to sell the object through storytelling? Now it's more what the story is built of and how you make it interesting rather than making an object desirable. We also had a talk from a guy from the Danish school of films – how did he build interactive narratives and how to make it interesting.

The next course is about digital design. The main part of the semester is about illustration.

The first semester call 'basic form' which is about general typography: from calligraphy to digital lettering design, and then typography-based book covers, film posters and making an entire book ourselves. Individual work. Now we work in groups where the outcome is group based (before it was part of the process, but the outcome was individual). It's fun and interesting creative process – a lot of ideas. You don't think about is when you work by yourself. The end product may not be the best, but you get a lot from the process – how to work with people. That can be equally as good learning. Sometimes the project is about getting good dynamics and work ethics. You are really good if you can handle a group dynamic and have a good result but sometimes there are conflicts about the outcomes.

What is the most relevant for you?

Since I studies in another school before I have a perspective about what it could be and not. Last semester I was confronted with the idea this is the right thing for me to do because I like the academic side of stuff, the theoretical and the idea based and also the practical creative side so the mix f that I really enjoy. This is perfect for me. I like the balance things are structured in total.

One thing I heard from a lot of people is that you learn equally as much from your collogues and from the teachers so it's also your own perspective. Having a creative environment and exchanging ideas with the students and with the teachers. The program is being structured quite nice in terms of what I need to learn. So far, it's really rewarding and well structured.

Right now, there is a bit going on with the students being unsatisfied with the structure of the organization but I'm not really subscribing to their point of view. As a student you can always demand for more. Some of the critique is they don't feel they are as valuable or skilled designers as the other schools are doing. I think it's a a bit spoiled position to take that the institution needs to provide something to you, make you a certain kind of

designer. The central argument is that if the institution had one way of creating a designer there have been one type of designer who came out so it's also what you put into it. I think the institution also creates a place for people to share ideas and mindsets. In the other school I was alone with my ideas. Here I can exchange ideas and have a common language with the people around me.

Sustainability

It had become inevitable to be concerned about sustainability. I fill it's a very complex world in general, but the sustainability agenda or ideas just makes everything even more complex. I was brought up very critical thinking so when people talk about sustainability in a very binary way I think it's a bit more complex and we often – I have the filling I can't do anything because the complexity makes it harder to take a decision so in terms of reusing paper or separate waste it creates more questions.

Does sustainability included at what you study today?

Yes and Know. Sometimes you just mention it when you need to argument for something. Non of the things we have made was centered around sustainability question or problem so I haven't worked around how can we work more sustainable on this because it was more technically or theoretically based on certain skills. The application to the school was centered around the SDG's. It was the first time I've met it and they also say that the school is working around these goals so that make sense, but none of the stuff we had been doing so far is centered around this kind of problems.

I think it's really interesting and that it should be centered because it's inevitable but it's hard for me to imagine how should it be because it's pretty impactful and important. As graphic designers all things that we make are coming from materials which are sorted in nature and we should be aware of that. There is a lot of complexity when we say we will more digitally but then service also requires a lot of energy, so I fill it's really hard to navigate on that. I think the other semesters are working more with social design and service design, which is more about sustainability, so my idea is that it's probably going to come, and I'll be a bit surprised if it won't.

Interview with Second-year Visual Design student

"First year we started with a lot of different projects. A lot of type, layout design, book design, a free project, and then we had some interdisciplinary courses with furniture and fusion that focused on writing an essay on aesthetics history and one was called – a way of telling stories which is kind of odd but it was very free so you could do whatever you wanted and frame it in that direction, and then the second year started… At the first year we didn't have any group work basically and now it's only group work. The first one was interdisciplinary with furniture and fashion and we got parameters to work with: Retirees travel in provincial areas and we were going to design a gift to the local host family, and we had to work with that. It wasn't real set you are going to create this or that, just find out something interesting about it. It was 6 weeks and that was really odd the goal was to learn a lot design processes and design methods which was pretty nice but what we did with it was really wired. We had to focused on the gift they are going to give to the local family they have been living with. The design methods were quite interesting to work with.

Which kind of methods did you use?
We had co-creation cards designed by Celia on setting up a workspace with the group and codex, and how you go through all these different phases like research, conceptualizing, prototyping, finalizing. It was divided to different categories and each one had a different set of methods like 'Lotus blossom'. So, we were working with pushing our ideas forward, that was quite interesting but the end result that we showed cased was a bus tour with a cultural experience in the province. In my group we were 2 people from visual design, a girl from fashion and a guy from furniture.

Then we moved on to a more visual communication-based project where we worked with a hospital and worked with an oncology department. We got a brief from them – they have a lot of problem areas they wanted to improve like medicinal cards and information given to them, how to personalize the spaces and so on. It was a group work of 3 visual designers. We worked on the staircases to make them more attractive and a campaign to promote physical activity while you're being ill which can be very beneficial. The staircase as a metaphor for making people having a more active lifestyle.

Now we are on an interdisciplinary strategic design course when we investigate a company – how they are perceived and what could be done in the way they are showing themselves and so on. We work with a guy who is an architect, designer and artist and also doing a lot of research and workshops. It's unclear but he has a big portfolio, so we are working with how can he be more easy to understand from an outside perspective. We've met him and it all made a lot of scenes when he talked about his way of working but when you see his website we couldn't figure out who is he and what does he do.

Is it a communication task or is it about the business side?
It's more business. We are doing business model canvas and value proposition, so the end result is not going to be designing the website, it's more like coming in a mindset of thinking in a strategic way.

Which kind of tools do you receive in this course?
It's mostly b.m canvas and value proposition canvas. What the needs are and how you fulfill those needs and a lot of post it notes. That's a 6 weeks projects.

Afterwards we are going to have a way finding project for VC in a museum to create some visual design instead of being good strategy for business.

What, from all these, do you find the most relevant for you?
I fill its all relevant but right now I'm missing craftsmanship. It's been an ongoing discussion for a while. I think that these things relate a lot to VC. I'd love to do more stuff like these scenarios – we have theses clients they need this but then to incorporate the whole thing instead of now we are only doing design thinking or craftsmanship. I'm missing more experimental visual work. I think everybody has an artistic drive even though we are not artists: illustration, typography, we don't have much time to do that now. Everybody wants to draw more.

Do you find sustainability relevant to your life? Does it occupy your mind in a certain context? Is it part of your agenda in a way?

In my daily life I think about sustainability a lot. I guess everybody is lazy and want to do more but I have this mindset – the way we are thought about it here in school like in the lecture last week about Co2 emission – I know the planet is fucked and we have all this but this is not relevant. It is a super interesting information but I it's not relevant in my education per se.

The lecture or the subject?
The subject. A good way will be to do sustainable campaigns and stuff maybe for visual design – how can you create something that will open people's mind and do a visual – an interesting website or a magazine, like choose this paper instead of this – I think that this is the level it should be on. I don't really relate too much to sustainability in my education.

So as far as I understand and please correct me if I didn't get it right – it does bother you as a person but when it gets to your professional life you don't see how its relevant for you.

Yes. The relevant part as a visual designer our job is to show information, so we can make sustainable information more appealing or interesting so people can relate to it. So it relates a lot to us working with a company that is doing these reports and then how can we make all these numbers appealing to people and make sense. That's a big relevance for me.

Does anyone talk about sustainability in your program and in which context?
We talk a lot about the UN goals. You can just put that on a sticker. It's always easy to say 'now we work on this goal' that was the first thing he had in the third semester – to connect our work to a UN goal.

Did you receive any specific tools to use in this context?

No. Not really. Not as a designer.

We had some sustainable apart of this hospital project, there were lectures from sustainability perspective but those were always on Tuesdays and I'm not here on Tuesdays because I'm working. But my group

mates were there and the only thing I heard from them was 'you are not missing anything' because it was a general perspective of sustainability instead of giving tools of how to use. That may be hard but that's the way I feel I can get this. All the information on how it is that's not really…

And this lecture – in which context was it?

That was in relation to our project with the hospital, so I think the furniture and the fashion have the same kind of courses but within their own- I think it's called 'design for others and with others' – that was the course, and the sustainable lectures it was for all the courses so I think that the thought was that we'll use this information we got from the sustainability lectures to implement in our own projects but from what I heard it was very general, didn't make too much sense, at least for visual communicators.

Can you give an example of something they talked about in these lectures?
I was at a one lecture and there was a guy that works with UN, and he goes around schools and work a lot with children and cooks food and play music and go on the nature with kids and shows nature and cooking vegetarian stuff for them, singing songs. It was quite funny but had absolutely nothing to do with what I'm doing.

Would you find it interesting to have more specific connection between sustainability in general to what you could practically do as a designer?

For me no. A lot more relevant for fashion designers and furniture since they are actually using raw materials. I could be a web designer and I'm only using electricity. For me no.

I think we all have as designers some kind of responsibility. We need to live in a sustainable world and we all. The sustainable stuff you need to learn various you are a furniture designer or a fashion designer or visual communicator. For us, for visual communicators it has more to do with show casing information, I think. And for furniture designer it might be using sustainable materials and the same for the fashion so I think that the one we got as sustainable and the once we got at the hospital – there were some that were talking about sustainable wood, FX, which made no sense for us but maybe for them. Our lectures about sustainability could have been more like showing information about sustainability in a fun way.

Appendix 10 – Interview with first-year Game Design student

We started with an experimental phase when we were working mainly analogue and made board game and – game. Along with that we had a drawing course. Mostly it was the group work. We had a couple of regular game design lectures by our teacher and he had a couple of people who talked to us mainly about regular game design. Afterwards we went to a little bit more technical with Unity, programing and we all had to make games in smaller groups. I was mostly in charge of programing and anything which is not drawing. I also did the animation and set up in unity. We have had a couple of courses with the other study lines from the same year: one with drawing some bottles and stuff, doing some context, and then we had the design history and aesthetics theory.

Board games was very much about what kind of games which people like/ We took some personality test and I found out that it matched out very well with me personally. What kind of stuff will be good for this person and how would people start games and what would they focus on. We had these cards; I think they are called 'grow game' they have like different verbs on them that you use to make your game and that's how we started to do the board game. We didn't end up necessarily using them, but it was just to make it started. There were couple of different categories like 'the mechanism' – what you need to do in the game, what was it all about. We had 'falling' which was hard to figure out because it's a board game, and the vibe of the game, the world (post-apocalyptic) and more categories. It could be falling, running, jumping whatever, another category will be post-apocalyptic, renascence…

Is it all about the universe of the game or also regards things that happens in the real world?
It's mainly for the actual game but you can use them however you want to. We only used some of it.

Then we made a role-play. It's not my favorite, I fill it's very hard to do. We had 2 weeks for each project.

Then we had week course in groups – we had to bring glass bottles and we drew them, put context into it, use lighting, self-portrait and small exhibition including lectures. It was for the whole school together.

Then we had two courses: Design history- a lot of lectures that ended up with a theoretical report. It was about different eras. At the same time gaming and program had to end up with a game – we had basic courses in programing, and we learned how to set up a game in Unity, and an animation course. At the beginning it was more teaching, then we moved to work on our own and then you could have asked a teacher, but you mainly worked with your group to finish the game. We had to write an essay like a developer's diary.

For the second semester we had another course with the other design students about storytelling and communication skills. We started – the overall theme was a magical thing. We had to find our magical thing and we had to write about it, put into context, do one minute movie about it. Now we work in groups and the overall topic is 'what would a world without design be'. Then we had couple of lectures about what we are doing – FX: what is a magical thing and how can you put something magical into a non-living item and that kind of stuff. Last week we had storytelling and video editing lectures and now it's also presentation – peaching an idea before the video.

How is it relevant for you?
A lot of games are storytelling and making videos is also good because a lot is cut scenes, games and such. And then everyone in the school needs to learn it because its design.

Many students are complaining that a lot of the shared courses sometimes fills irrelevant because they have to be applied both for game design and furniture design so for us specifically there ere no references to games at all – the people during the lectures didn't know anything about it, but there was more than one lecture that put it into gaming context and that was really nice so we know that we can use this.

When we did the one with the bottles, I can see it's cool drawing lines for the architects for some cool shapes they can use but we were having trouble to put it into gaming perspective. We had a textile woman – her whole lecture was fashion design. She showed how she made big dresses of paper and glued spoons to her face – it became 'the lady with the spoons on her face' – we face like we can't use it. I fill like it was very relevant for the fashion designers, but we didn't understand what's going on.

We know that not a lot of people knows a lot about games because it's kind of new, but it's really nice to have someone that can actually say something about games.
Since its story telling this time it makes much more sense that it will connect to us. I fill storytelling is very easy for us to put in the context of what we are doing. Design history – off course it's important for us to learn but I fill like they (furniture, fashion), can use it more directly.

I know that the school is very up and about sustainability but personally I don't know a lot about it. There are couple of things in my daily life when I think about it but most of the time, I don't think much about it.

How do you fill that the school is a lot about sustainability?

They sent emails about the program and there was this event and this event, so this is mainly how I see it and when we started the school, they were talking about that they are trying to get more sustainable and all that kind of stuff.
For gaming design, I don't think it's such a big problem because we do everything, or most of the things digitally which I'd say is very sustainable, without wasting. Buttery off course but I guess they hear more about it than the other 3 study lines, but I have no idea, I just imagine.

I haven't been to any event about sustainability in school, but I know they have some like exhibition with a bunch of sustainable stuff that other students have designed, so It's not anything I looked into. I know I've seen the word several times on emails and posters and stuff, but I don't really know what's going on. It's not something I actually hear about in my everyday school life. We don't really talk about it. I don't know if we have talked about it at all in our study line probably during the cross lectures, but I'm pretty sure we haven't had anything about it gaming-wise.

<u>Would you be interested in having it as part of your study program?</u>

If it could be in the realm of what I think is possible I'll be up for it, it's not that I'm against it. I also don't take a lot of, it's not something I think about all the time. I just fill really bad when I get new plastic bags. I don't even know how much of a problem it even is, it's only what I hear, but I only think about trash. I don't know what a more sustainable way would be to work gaming wise. When we do board games it makes sense but when we seat around program and draw digitally, I don't know what could be changed.
In board games it's the material. This is all I know about sustainability – using a lot of stuff that you don't necessarily have to use.

Appendix 11 - Interview with second-year Game Design students

The thing I remember the most from the second semester is the ADG project were we were together with the masters and some other bachelors, and we've made this whole game together and we all came from different places' I was pretty new so I didn't really know what to expect are what my job supposed to be, but I guess I took the job of being game designer.

Which course was it part of?
ADG project – Art and Game Direction project. And then we all had these different challenge: conceptualizer,..

You had different roles – each of you took a role?

Yes, depended of which role you liked – there was also the narrator, visualizer, I chose to be a visualizer and draw instead of making the story. The options for the roles were given.
At the beginning of the semester we also had with the other institutes something… The first year was really messy for me. I didn't really know what's going on most of the time and I didn't really know what to expect from the school and what the school expected of me. I think we have a lot of mixed courses with the other institutes, so we don't get that much in depth with our own courses. I think there is too much for that. We don't have enough courses for our cause, so we don't get that much in depth with our own course.

What did you study on the third semester?
It also starts with common course. We had sustainability and we've made this project where we melted plastic bags and made it into lamp shades. We had this problem – how to reduce waste in big cities for people at the age of 35 to 70?- which was pretty specific – we all chose different problems – we chose 3 different words and this is how we came up with what do we want to work with.

Was the course about trash?
Some of the projects were around other topics like – how can we in summertime reduce the hit. An then we read into what kind of trash do we want to work with and where do we want to draw inspiration from. Another student that was in Kenya took plastic bags from the street and made windows from it. We saw the opportunity and we made lamp shades.

How did you get familiar with his work?

I don't remember. It was someone else from the team that knew him. Maybe it was an exhibition here in the school.

What was the structure of the course?
First, we picked a random problem. Then we had to make a lot of research. We went to recycling warehouses to see how they handle all this waste and that's also were we saw we can't handle with that and how much potential it has.

Was it part of the lessons?
No, we made it ourselves. They told us we should go out, but we had to choose were to go. We went out in the streets and ask people how they sort the trash in CPH and they thought that was fine without problem. But they've noticed there are not much recycling bins around the city. That was a fun thing to know.
Then we made a workshop for people staying in hostels were they could participate in the workshop and go in the city and collect all the trash and then they could separate the trash from one bin – only for plastic/ normal trash so they don't need to separate it afterwards. We designed the bin.

Which kind of tools did you get in the classroom? Supervision? Context?
We had lectures. Once or twice a week we had supervision – teachers that came in to talk to us if everything is alright. There was one from furniture design and two from visual communication. There was no one from game.

What were the lectures about?
I don't remember. It was the same teacher in all of them and she also participated in some of the supervisions.

How did you fill to work on this project as a game designer?
I didn't care for it much because I thought it doesn't give any meaning. I couldn't really see were I can be useful. I felt like – if something digital has to be made I need to do the job – FX: we had to make a video and a pamphlet. That's when I came in and did it, but I didn't really fill I get much of the whole course. I just couldn't see any relations to my field.

Do you fill that this course gave you anything for your practice as a game designer?
It was completely disconnected. The lectures didn't teach me any game related stuff and it just felt like I didn't learn much from my field. I learned a lot about sustainability and other fields and that's interesting, but I just think there needs to be a connection between it all.

Do you find what you learned about sustainability relevant in any way?
It made me think a lot about how I throw my trash out and stuff like that. I've never been the kind of person who throws it on the ground, but you spot the trash around the city more often. In a future context when we have to use it for work or something it doesn't give me anything at all I would say.

Does this kind of matters is something you think about in your daily life? Sustainability

I think it is because I think it is a problem. I try to realize the problem more and more especially on this course. Especially in the textile world there is a lot of over consuming - you start thinking where does my cloths comes from? Who makes them? And stuff like that and I never really thought about it before? But in this course, we didn't have anything game related. We have this whole revolution going on in the school – we wrote to the teachers and the head of the institutes- we want game related topics in our courses- because we learn a lot in many fields but just twithought the dip core of what we should be learning and I think that the teachers have listened because now the put extra lectures for us to attend. Workshops, but it didn't start yet.

Do you fill sustainability Is something that is present here besides of the specific course?

Yes, It's there all the time.

And how do you see it?
I think it's good that it's there, but I don't think it needs to be there all the time. FX: they write about it a lot at the newspaper and on the email. They invite us to different events, so I think the school is very committed to sustainability.

Appendix 12 – third-year Visual Design student (notes from home task)

- **Framing:**

Class: Design for others, design ethics and sustainability
We worked with the Oncology Department at the University Hospital in Copenhagen - Rigshospitalet. In our group we focused on the medical papers such as medicine overview and the side-effects sheet. Sustainability here meant the life quality for all people and not just for the few.

- **Entertaining**
  Illustrations and Animation - Serious problems are often highlighted in newspapers with an engaging illustration or animation that tempts the viewer to click. We got a task to make an animated illustration for the Danish digital newspaper called "Zetland". We got to choose from 2 relevant articles.
- **Connecting actions to outcomes**
  Variable font x Creative Coding

Using creative coding and machine learning. By training a classifier algorithm you can get a font to move or act a specific way
Data, numbers x Creative Coding?
I was wondering if you could train a classifier algorithm to certain information that would change to body movement or other actions. And thereby engage the individual to new relevant information.

- **Amplifying weak signals**
  Infographic - Complex data through visual representation make it digestible for a wider audience for example we had an assignment to look at personal data and visualize it. Some took their menstrual cycle; I took my music data on Spotify.

<u>Mediating complexity</u>

- **Making systems visual and processes transparent**
  Infographics - Again complex data through clear visualisation gets a wider understanding
- **Rearranging data**

wayfinding (pictograms) and signage - Right now we are creating design solutions for Ny Trelleborg - a viking fortress. The solutions have to link to the place and the spacious need - and contribute with a solution that can develop the place to become an interactive, learning and exciting place for visitors

- **Facilitating thinking**
  all classes - co-design Facilitating co-design workshops through visuals can be really useful for the end-product or the end-service.
- **Turning the invisible visible**
  Illustrations - Thinking again how visualisations of something rather complex can help your understanding of things. For example, could you make a non-fictional magazine about data-visualisations. Or just an infographics poster.

Appendix 13 – Interview with third-year Visual Design student (notes)

“The first year of visual communication is ‘here is this project can you make something which is beautiful? Can you make a beautiful solution? Can you make a book design for this book? But you don’t have the opportunity working for the client”.

“I fill they have kind of spend energy on teach us that – entertaining”

Framing – exist as a brief in the narrative course – choose a problem and try to make it relevant for others.

Pitching a topic was not necessarily a visual task, more an oral one

“I’m a little bit disappointed that we haven’t been able to track any performance of our solutions…. So oK, you have made this design, but does people want to use it? Does it make an impact?

“It was mostly focused on circular business models, and how do we use materials and this kind of stuff but as visual communication we didn’t fill it was so relevant for us. Because our impact that we have with design is not that CO2 heavy. We make a bunch of digital solutions so we are sitting there and OK, what does that have to do with us? At least that’s what I fill.

“More people like her make it relevant for us” (on Henriette)

“When there is a person who is in the same field you start to pull out the ears – OK, this guy looks like me – he is doing the same stuff like me…”

“If we were just to make a bunch of smaller projects, show them for the teachers and get a feedback 1:1 or to have an open critique that will be super useful to have more of that.

We have too much theory. “Whenever I see something like the butterfly diagram I like: Key, I don’t need any more theory. It’s too much! … There is a saturation point and beyond of that we can’t, we just not go to listen”.

Appendix 14 - Interview with Zeenath Hasan

About 5-6 years ago Linnaeus university, which is about 10 years old now, the second youngest university in Sweden, decided to implement vision 2020 which involves progressive radical education in the university in the design department which until that point was teaching what was cold 'Design and sustainability'. We received a mandate from the rector's office to launch a more progressive version of 'Design and sustainability' so in 2015 I joined as part of the new stuff that was brought to implement the change in education. The previous bachelor stopped, and 3 new programs were introduced: A Plus Change profile was introduce when Plus change was a holder for all things sustainable with a critical view on sustainability. The world was used a placeholder, as a buzzword with all consequences of it being a buzz word and having many implications according to what filed or discipline mentioned it and also a strong foot in the practice and education design as being relayed on exponential growth and physical materiality and industrialization so therefore the Plus change dynamic was introduced.

So there was a decision from the top to introduce new education but no indication what this education is apart from that it should be progressive. In the document you can see the university goals, and then how the department operationalized those goals. The key words were that whatever education or research activity the design department moves into, should involve prominent both scientific and artistic research with focus on societal development, a commitment to societal challenges, international and multicultural knowledge environment and a companionship between people: a collaborative learning and doing. This was translated at the level of the staff. Because you have staff that have been teaching what you could call traditional design skills. They needed competence development and new staff that came in – we needed to be able to work together. So there was also a lot of work on group dynamics and what new practices brought in. We need to learn from each other. That goes for BA and master because the three programs – there is Design+change master, Design+change bachelor and Visual Communication+change bachelor.

In Sweden the funding does not only come from the ministry of education, also from the ministry of culture, so progress carrier drove in a university is not only about intellectual growth, it also seen on the basic of artistic merit so journals, publications, talks, applying for funs is recognized conventional forms of seeing the development of academy – merit but also artistic production, curation, organizing workshops also recognized ways of carrier growth. This was very important that there is no hierarchy between the two. It's possible because the nature of the funding. I think in DK it's only from the ministry of education.

At the classroom it's only English. 80% of the students are not local Swedish and 40% non-EU local. So even our formal meetings are all in English – it's a bubble in the university. The way we form our teaching teams – we teach in groups of 2-3 per course or module, preferably the same time at class, at least when it gets to tutoring. This was 5 years ago. It should cover artistic practice, theory, and design or visual communication. This is because of the two different programs. At the beginning it was translated to 2-3 people but because of our practice it turns it could be 2 or one now because the way we were working together informing each other and building the course together. There is one course coordinator who could be one of these who is the course guardian.

In this course the first year is about tools and processes at the third semester they go into infographics, then it gets a regional focus of Smoland, and then there is the Plus change semester before they do their final project.

Every program needs to go through a review by the high education order which is another body. The BA program just went through a review last year, so they are implementing changes – ask her what the reason behind it are because now the program has been gone through 4 iterations. The reasoning behind the progression comes from Meta design and this is what we call a 'nested model' when the progression is from tangible to the intangible when it comes to the material, from the local to the global context, you start thinking about design as a product, in the second year as a system or service, and at the third year at the level of the paradigm, but it doesn't mean that you stop thinking in this criteria when you go to the next level, that why it is nested. This model was developed by our professor Mathilde… and her research collogues from Goldsmith. The progression of the students is from 'me' to 'us' to global 'we'. In tools we don't talk about things like software – this is very much for the students to pick by their own. It's mostly about artistic articulation in 2/3D and infographic. We bring in strong Marxist focus to the education and also Pank visual aesthetics.

What is your background?
Post-Marxist tradition of social entrepreneurship. When I do teach it's in the global focus. That' how we can place ourselves in the education as stuff.

What is your main aim in the BA comparing with the MA?
At the BA I've been teaching from the beginning. At the first two batches there was always this conflict between the student's idea what a traditional design education offers. They really expected to be ready for the job market at the end. We say we do a lot of collaborative work with the kommun, with nonprofits in the region, but it's to develop new practices and your own artistic articulation of a practice you find yourself in. For instance, some of our BA students joined their parents language school and developed packages for their international students to get more cultural training. Others wanted to do research in agriculture systems.

So do you educate artists, entrepreneurs and cultural activists rather than designers?
We are trying to expend the idea of design.

But not the classic designer that will work in an office on something digital
Some do and that is fine.

But still you have general program and a visual communication program, right?
In the design+change master we have students that come from completely different range of BA design educations, so we had car designers, social media, interaction designers, graffiti artist and more. There it's more about working with non-creativity and non-criticality, performing criticality. We do bring in aspects from meta design, trans-disciplinary design , so that's what you could say is the design elements because that's based on research by design researcher and their work, but it is a shift as we have noticed in the past 15 years sitting inside design studies which is a conventional was now of describing the emergence of

knowledge bodies. But if you go to look at it in terms of shift you could see the shift is more towards an expanded notion of materiality, a strong influence of feminist sciences. FX: collaboration with microbiologists working on developing cooking oil based on fermenting woods which could be threes in the forests or pianos that have been thrown away. It has a nationalist agenda to make Sweden more reliant on its own internal food production and that's were he'll aim his work and his findings and then we come in and collaborate with him and the students are asked the question 'what is a society were we eat cooking oil based on the threes that we cut in the forest?' and than a group that takes a feministic perspective will look at the interaction between the threes in the forest, the human as specious an the microbes in fermentation process and how do they relate to each other and then start thinking about how production, economy, labor coming into the picture and that will inform the scenarios.

So what I understand is that you take a radical theoretical perspective, you apply it on specific design cases (in the broad sense), and then you work towards something that considered to be design (like scenarios). It's about applying a theoretical avant-garde filter on design practice. Is that what you do?

You could say that. And that itself is like a tottering session. I'm sharing my position in my practice and the student is trying to identify his or her own position in the design landscape. This is what we see as a radical pedagogic. I'm not saying – this is design you shell practice this, and you should take design for what it has always been.

You've mentioned that sometimes there is some kind of conflict between students' expectations for some traditional design education and the practice you offer them. What happens there?

I would say that 30-50% of the group and it's becoming less and less. Maybe it has to do with the world that they live in when they join the program. 'I thought I'm going to design chairs, why am I not designing chairs? Why aren't you teaching me about ergonomics, user studies?'

What happens there?
Then we nudge them to think in what kind of a world does this practice exists. Where does it exists in their own world? In what kind of world does this practice is serving? Do you identify yourself in that world?

So if I'm the students who want to design a chair and I'm asking why are you talking to me about feminist radical theory while I want to shape this wood that it will look nice, what would you tell me?

Who is sitting on the chair? What is the space this chair occupies? What is the chair performing? This words that I use were introduced to the students. It's not that we had no students that designed chairs. One made a broken chair as part of a children's book where the story was to fix your chair that is broken, so you see that 'the art of living in a damaged planet' is a different sort of art then forming something of things we take for granted from resources that are taken for granted as being always present. And this shift is something we can't put in a textbook and say, 'you read this and start thinking like this'. This shift is addressing both the everyday we face. We call it 'making' and unmaking'. So how can we deal with the 'unmaking'? with the uncertainty of making as we learned to take for granted, for the things to always be there. Can we move to unmaking?

So one thing is that you provide the student a different context, or re-framing the problem in a different way than what they expected according to traditional design and another thing you provide the students are different theories to think about the matter they are doing through them. Is that correct?
Yes

How do you choose which kind of theory to introduce to the students?
We have cultural heritage scholars, activists, media ecologists, scholars, rural art activist, meta designers, cultural studies, social entrepreneurs. How did we get gathered?

In the field of critical theory there is so much to read and introduce etc. so how do you choose the most relevant things to give the students? Which filter do you apply?

At some point one of us is always entering the classroom and saying, 'I'm here to teach design but I'm not a designer'. This is an engagement from the field of practice from another discipline. Trans – disciplinary approach rather then cross-disciplinary approach. Meaning – don't take elements from here and there together to see what's happening but you take a stand on why these two or 3 disciplines need to be talking with each other. A stand is something we all have something to say about. That's the filter.

So you are teaching something that you are not specialized at as an insider but there is a reason you teach it. It's not just for the sake of-

Intellectual input or finesse in skills. Because there is a meaning why we raise questions and 'we stay with the trouble in our own ways'. In the Master my first BA students had a lot of clashes. It's about group dynamics but it is also about expectations. I had one car designer that only wanted to the design the smoothest looking car and I told him he is in the wrong program. We also work with the communication I don't think we are misleading. We say we are broad, we are holistic, critical and still we get students with these expectations so at the point of application we look at the portfolio and there's need to be some emotional sustainability whatever your notion is and then we ask for a letter of intent that helps us filter candidate. On the BA in addition we also ask for an assignment design with another spacious.

From the beginning you set the criteria's in a way that won't create misunderstandings.

I hear you are working with design and sustainability from a very radical perspective comparing with what exists in the academic field which allows you to re-frame the entire program according to your understanding. I'm working with a very traditional design education and I'd like to ask what is your advice- if the traditional design program don't want or can't to completely shift their perspective about design, but still would lie to implement more sustainable principles/ mindset/ tools – what is the most important significant things they can do?

I'm not going to enter into which office needs to be convinced but, in the classroom, – I've been also teaching in traditional design schools. I think they need to introduce more radical pedagogy – there is such a thing. We know hands on learning, which is the traditional way of learning design in the form of the

studio, which is a close space and a contained space. There is scope for bringing the classroom outside and I don't mean taking the students and throwing them in the sea. Radical pedagogy is a larger trend and then public pedagogy is one. I can point you to papers that write about it. This could be an important class level change I could expect in a program that want to engage in sustainability. And then thinking about – this discussion can just be going on and on. We have lines that we draw between theory and practice and formal function. I think we need to move away from that and try to think of them as one. Forget form-function, you need to think form-function-context. Can we think of it as one? The division between theory and practice has seen either as hierarchy or as two different worlds but we know you can produce knowledge in practice as well. So what is this knowledge looks like when it's produced in practice, in doing? What forms can that take? This are questions that research within design are still straggling with. I think it's coming to a good place in Scandinavian universities and in some parts in the US but it still has a long way to go.

What are the main principles for radical pedagogy?

They will sound very common sense but it's hard to bring into practice because it seems like it's something that doesn't belong in the design classroom. The dialogical process between the student and the teacher, the collaborative learning dynamics among the students and the stuff and teachers themselves, the relationship buildings with society – how is society introduced in the classroom in a form of a chair – take the form of a chair – how is society in a chair? How is culture in that chair? And this is coming from a very feminist POV – who do you refer to? Whose shoulder do you prefer to stand on?

Appendix 15 - Interview with Ulla Ræbild

How did the program start?

The program started almost 2 years ago. We had 3 labs in the schools: sustainability, social design and play. We saw a need to change the overall master programs towards the challenges that we see who are relevant to work with as designers for the future…. Because I've been working in sustainability (my background id in fashion), I've been asked to develop a course with other researches and teachers here for this new program based on our experiences for the last 10-15 years with sustainability. So, we did quite a radical thing with saying that it is important to have a discipline before you are going cross-discipline so we decided that the 3 p's: people, play and planet it's a mixed group. You have to have a discipline to enter here, a more traditional field but we also get people that have studied more experimental programs from abroad, but you have to have a BA in design or something related to design. And then the programs here is in a multidisciplinary group because we don't tell them to leave the discipline behind but they can build on top of this to a new direction.

What I decided to do together with the group is to say we don't have any hierarchy towards the level they have to work at. You can work from a product level up into political or societal level. For us all levels are relevant because the challenges needs to be addressed in different levels so people can have different interests or competences and sometimes they need to work together in different ways to function so this is one thing we are looking at in the program – we give the students a possibility to see what are they aiming for without mentioning any value – that it is more or less good to work with products than behavioral change or society or something. The other thing we do is we say they can, within this scope of sustainability levels they can – the briefs are quite open, or the course description is quite open in the scense that they have to come here with an agenda. It's not like a BA where the briefs are often specific. It has more to do as addressing sustainability in different ways, addressing the methods, the approaches, the theory, the thinking and experimenting with it because the students in a way are out in front with us with the researchers, because we are all trying to brake new ground. We try whenever it's possible to explore things in our research or involve the students in what we do, to ask the questions in the brief for the things we think that are relevant. We don't say they have to do something specifically, but we say they have to explore something specifically: what is the using, what is their aim. The students have to be mature and to know what they want from the start. To be self-driven to have a motivation. We often see students that have been in the industry for some years and then they come here because they know what it is, they want to change.

The first year there are 4 different approaches to sustainability: We discuss later on in a way they could be seen as representing the 4 pillars of design: environmental, economic, social and cultural but it wasn't how we saw it in the beginning. We have a course that looks at cultural practices at the past: We have been unsustainable for a very short period of time so we should also look how did we do things before and how could it be relevant in new ways in the present and in the future. We go both very back to an old culture that still exists today, but it can also be only yesterday. We are going into homes understanding how things are build up at homes so It's both. It's part of the methodological package of that course that they get different ways of approaching the past almost up to the present looking at product timelines. Different kinds of readings when we often go to museums and try to understand other cultures. It can also be understanding different cases and then they can frame their own thing they want to address whether its practice, an everyday way of doing things or a material. In a way we see that as the cultural aspect of sustainability.

Than we have the materials narrative course which is about re-defining what the material is in a way, see how we address it and how do we use it, see it like the membrane between us and the world where design go and we need to re-assest materials in a completely new way because it's less then an expression but it's becoming more like a starting

point because it is so important how do we use our resources so we need to think the materials right from the beginning instead of pulling it off the shelf for some aesthetic. Exploring materials in new ways could be going outside and see where we are in Kolding but also something more abstract about our relationship with those materials. It doesn't have to be a product, but they need to create a new narrative around them. We take materials from a specific context and we need to see if we can reframe the story. The materials course also relates to environmental issues or ecological issue

And then they also have a skills course where they need to dig dipper into the disciplinary skills

The Proffered future course looks at sustainability through speculative and fictional approaches – how can design be part of shaping the future by imagination. How can we make tangible and understandable – for the stuff that isn't here yet, how can we be part of imagining for proffered ways of living or doing so that's the whole future thing – speculative approach.

And then the last course of the first year is systems course that we do with companies – last year it was with big companies, this year we'll try and select smaller companies. It was &Other stories, part of the H&M group and then we had Lego as well. That's to see how it is to be in the machine room and what they can actually move in there, how to build upon business models which are already there and try to look at values build ups, how flows are internally with materials, potentials and stuff like that.

Why than do you call it 'system course' rather than 'business course'?
It's not a business course. To understand business, they have to understand the systems. In a way all the courses here look at systems. If you don't understand the systems, you can't think about how we can drive an economy in a different way. You can have courses like the material course where we don't ask students to look at systems necessarily but many of them do. I think that designers need to understand that the stuff they make doesn't exist in a free floating space and if we want to change something we have to understand how it is connects to the world and also as a designer how can you make a living. If you want to be free in the sense of deciding who you are going to generate value for not only economically but in the broader sense you have to understand the context of your work – how is it attached to the world in many ways and the economical hankers. Here in the systems course it is specifically about the experience of working with someone. Very difficult to move in a way because It's already exists and already been born with a different type of business model, and now they have to try and see if they can change something and that's a lot harder than working on new concepts off course.

The final half year is their own thesis work. Third semester is very much going into the world. They have a course about how to become a knowledge producer. Mostly like working as a researcher here they explore scientific methods something in the world and observe and they write up a paper to formulate relevant questions to explore. It's to give the designer the possibility to be part of the knowledge generation in the world not only through the hands but also in a scientific way. It's important for them to reach out and form networks, to find out who are the light-minded people and how can we build on each other's knowledge.

The last course is about co-creation and behavioral change. It's about identifying communities and with these communities addressing some kind of issues because we all knows a lot we are so aware, we know what needs to be changed but it's still very difficult for us to make those changes because we are tied down by habits and we are embedded so it's difficult to do the right things sometimes even though we know we should so it's also to figure out how can we do things together like create better ways of doing things differently. Each group makes a film about the process and what they learned and the output is a proposal what could the next step be so it's about co-creating with communities which can be really hard but possibly quite an important skill to poses, so we don't seat ourselves and

decide what others should do. If we want to change things it's not only through products but also through other means, to be able to engage in dialogue -processes of ideation and stuff with other people.

Skill course

The students come from many countries and many backgrounds so it's to get them familiar with the workshops here at the school. They get some assignments to work on in relation to their discipline and their theme and they need 'to rehearse playing the instrument' because at the courses there are now there is not so much time for workshop teaching therefore we need to put all the skills thing at one course at a time, so it's manageable from a logistic point of view.

Does sustainability come into play when teaching skills?
The assignments have some kind of relation to the programs they are attached to. FX: it could be a zero-waist cutting course in fusion. The focus is on heightening the level of practical skills. In the other courses there is a heavier theoretical background and here there is more of understanding the technical and practice-based aspects, but it can also be about understanding craft in relation to tech. We just had a camp about the relevance of design with new technologies with 5-6 companies, so they got perspectives of their potentials and challenges. We try to link the skills to something they want to do.

What is the biggest constrain you work within the context of sustainability in design education?
It can be so many things. We are trying to move the general perception of sustainability from something that has to do with materials only (because it's not) and from the idea this is something we need to arrive at and then we are finished. Hopefully it won't be necessary soon because it will just be a general way of thinking and the program will be redundant. We only try and introduce different ways of working with sustainability, and different contexts, strategies, tools and approaches. The challenge is also to curate the right amount of stuff, texts, models because otherwise you just get overwhelmed with all the stuff out there. That's also the danger that you miss something that is important as well. We try to exemplify future pathways they can take as designers and how can they work and then they need to find what do they fill most happy with or comfortable in. I believe there's going to be a big change in how designers work. They have to be part of shaping it themselves when they leave here. Designers where born to make products so nice that we want to buy them, to push consumption and if that's not our role any more what is it then? It has to be reconfigured completely. You have to use the aesthetic competences for something meaningful. It sounds very holly… at least that people are aware of what they are doing and make a conscious choice.

What principles do you have when curating the things for the program?
Something that is simple but not simplistic, which is quite simple to understand but doesn't simplify the matters.
To have text that shows different versions of an issue. We try not to give one answer to things. We also make some tools ourselves that we are quite happy about. We also try to introduce to films, podcasts, practice-based stuff – not only papers and articles, that knowledge can be many things and they are all useful for different purposes.
We rather to have fewer things that we know the students are engaged with than a very long reading list that we know they are never going to read. Because we have so many disciplines the stuff we introduce to is on a general level that can be relevant for everyone.

- London collage of fashion – fashion's futures
- Holland -Eindhoven college

Appendix 16 - Interview with Tina Slåttedal Jacobsen

Design it is very much Scandinavian Nordic company. We have 18 offices around the world. Our mission state is Design what maters – in this we mean design for more sustainable world in general so we include in it services that make lives better but also about the surrounding or the climate in general. Last two years we had an enhanced focus on sustainability so we are trying to build competence but also to look at our projects – how can we implement more sustainable principles in our projects so every project that we do with our clients are more in lined with the sustainability principles that we have. Off course we have designing for human centric – something that is very known in design approach – what design approach is build upon. Now we are also looking at – the climate and general and our natural resources so we are talking more about 'planet centered' design as well and try to balance that up with the 'human center' design approach. We don't claim to be experts, but we are very kin and eager to build upon whatever we know and take that to these new challenges that we face with our clients. That's what our approach is right now.

How do you develop this capacity in a field you are not an expert at?

Our business model is saling our knowledge, because we are a consultancy, so we help other companies to build business plans and strategies and succeed so it's important to us to build on this competence. Whether it's regarding sustainability or any other topic this is something we have ongoing processes on so individually we spend 40 hours per year to do some courses we are interested in or do some deep dive into a field that we want to enhance and we can individually choose what we would like to educate ourselves in but parallel to that we have an ongoing program on sustainability because we know that we need to know more about it and we need to learn from experts out there, we need to learn from other people's failures and successes so we have a sustainability program internally so I can mention few activities or concrete initiatives : We have done a study on Nordic companies in Norway, Sweden or DK, everything from small startups to large cooperation like Ikea and a small startup that builds block chain technology that collect ocean plastic and convert it to currency that the local community can use. We interviewed all these companies and tried to extrapolate what are the general learnings – how did they succeed and overcome some challenges that we are probably also facing and we can learn from their experience. We are now analyzing these interviews and we are making a report which we'll use to gain knowledge ourselves but off course share that with our network so we could forward this knowledge.
We also arranged an event 'sustainability day' inviting clients, potential clients and friends to come with their sustainability concrete challenges and present them – we will present possible solutions and mix our design approach with their expert vision on their industry and try to come with solutions for those companies. We also do that to attract customers who are serious about sustainability because we would like to work with them. Although we try to create sustainable solutions to whoever comes to us with a problem, that's probably where we could make the best learning.
Asiad of that we have a 'sustainability talent Friday' where we'll deep dive into topics within sustainability with 50 people in the office. We have sent them a survey and asked which topic are they mostly interested in – and came up with design for circularity, design for sustainable innovation (startups and new solutions to meet SDG's), design for transformation (transforming existing business model in large cooperation's to become more sustainable), design for sustainable behavior, design for sustainable policies – (how can we

influence policy makers to make sustainable solutions). Then we will split up to groups and do research, discuss the topics and come up with concrete take always and initiatives to take it further with our knowledge.

Many students and teachers straggle about how to connect this overwhelming task to their work as visual designers. Can you share how do you make this kind of connection in your office?

In every project we try to make it a sustainability project whether it's designing a new carton for a milk provider or building a service for a public actor. It is a complicated picture and there is no one way of going with making sustainable solutions. As a visual designer I'm assuming you will collaborate on a brand strategy and general strategy of the product or the company.

In my experience we normally do visual design as part of a bigger design project and there is a lot of impact you can make by building sustainable brands about how you communicate. We are also a brand company so part of our team we have brand designers and there is a huge impact communicating the sustainability mission through your brand, but also how you reach people with this massage is a study for itself because there is a lot of shaming in sustainability now days so we as a company are trying to put more focus towards a positive massage – try to be ambassadors for positive change rather then shaming bad choices and try to make people feel bad about being consumers or using transportation because we acknowledged we build the society where it's very hard to quite everything you're doing because we are all contributors to the bigger system driving us towards extension… but we try to create more of a pull effect rather than pushing a sustainability scare massage and pull by the positive change we can make.

What happens in your office in these events? Someone is coming and giving information, and what will be the next step? How would the activity would look like afterwards? How would you take it further?

We don't have a formal process but by focusing on it in our deputy work, and involving the CEO and the general manager – they are all top down are very focus on the sustainability massage and building the competences so being focused on this topic we just bring it to our projects and bring it to our minds all the time. We off course try to make specific methods based on what we've learned and different workshops but a lot of times if we make a tool without having a project connected to it it's hard to use it. We have experienced that instead of making rigid tools or methods to follow we can still use our design methods that work really well and bring in our sustainability principles. The more we focus on it in our daily life and learn it in our professional lives it becomes more internalized and become like a default way of thinking. Every project is very different and also how can we save the climate in every project – sustainability to us is not only climate it's all the SDG's. Most of our projects are probably more towards other sustainability goals then climate actions because we work a lot with public services and how we can enhance or make services to people with specific needs. It's important to emphasis that we focus on the broader aspects of sustainability and not only the climate. We think that a continuously focus on that will continuously build a momentum on those aspects and maintain it is supper important because now we try to build platform – our knowledge but also competences on what we can offer within this field which is everything. So, it doesn't matter what role you have or what company you' in or what you're doing, we are all influencing

this world in some manner so everyone can make a different or try at least to not harm. Start by not harming and then see how you can regenerative solutions and rebuild what we already destroyed.

By having this continues conversation in our office we continuously inspire each other and it becomes more of a culture then some sort of OK, this week we going to focuse on sustainability and next week there is something else. We try to build it into our companies culture.

From your position in the industry as someone who encounters many of the recent graduators from design schools, what would be the competences or skills you'd like to see in a designer to be more sustainably oriented or to be able to work in a more sustainable mindset? Is it a certain kind of knowledge or perhaps something else?

I think that knowledge is super important. We are not completely educated in sustainability so whatever we can get from our new designers on this mindset is super valuable. Design for circularity – from the very beginning of the process of making a product or building a service – how can we consider sustainability in these early stages. How do we assemble a product so it's easy to de-assemble or redesign or reuse, or upcycle, I think that the most important thing to teach a student is an attitude that we value our resources as we have to realize that we have a limited amount of resources and they are declining. They will be more and more valuable in the future as they continue to disappear. With this mindset I think you can easily focus on the right things in the early phase of the design process, so trying to always have the circular mindset whatever you're designing. Always try to keep in mind that the resources of these products will need to live an afterlife as well so how do we design for making that possible? This doesn't only counts for products abut also for devices – when we are making service or redesigning an existing one – how do you with the minimum amount of efforts make the maximum amount of impact? (that doesn't necessary means reducing co2 emissions but how can we maximize the value for people and enhance our general lives with minimum amount of resource required). Another thing which is super important is that all the sustainability challenges we are facing are super complex and one single actor can't solve a problem alone so we have to learn to increasingly collaborate with partners throughout the value chain but also across industries and with your competitors to create standardize solutions that we won't need to redesign everything – it often means that you need to collaborate with your competitors and have to understand that we are in the same bout and do different things but we if we won't be on this together none of us is going to succeed. We have to build communication skills, we have to be able to collaborate but also communicate across industries, and maybe design is a way to go with that because try to gather viewpoints of many different actors at the same time and look at a problem from many different angles. Design can be powerful as a process in that effort. We need T shape people that have various skill sets: not only the expert expertise, people with understanding both the business situation of things but also the costumer side of things and user perspective's but also the technical requirements because even though you are not maybe be an expert you need to have some understanding how the efforts you are making on the technical part have an impact on how we can optimize our business model so it's important to communicate on these different capabilities, and this is something that comes with experience and working with multidisciplinary teams and you have to be humble to understand a problem from somebody's else's perspective which requires some listening skills - which is something to keep in mind – how can we enhance our listening skills and have a focus on collaboration rather then competition. Because capitalism

is very much based on competing for the best resources and the best skills. Even tough that's the nature of the game we might need to lower our guards a little bit and open up to share more of our skill sets, learnings, and both our successes and failures that other people in the same field can learn from it. And you can see a lot of companies doing it already by sharing things. I'm involved in a community called "The hive/ hike" which gather different companies who try to solve the same issues and I meet with our main competitors in the Oslo market and we discuss mutual problems we meet with our clients and share our experience and share them as equals.

What in you perspective is the biggest challenge or constrain in working with sustainability in design?

Probably being early enough in the process. A lot of times we need to work with existing business models and value chains and a lot of the very crucial positions have already been made and manifested in their business model. Sometimes we have to change core things in the business model to even make it a sustainable model because the model for itself is not sustainable. Many starts with an innovation lab inside the company that try to look at new ways of doing the same things in a more sustainable way.
Another main issue is when top management is not fully on board and is more concerned with short term goals and KPI's and bottom lines rather than acknowledging that we all have to invest to redesign the entire model. That can be a challenge. And engage the entire company because if it's only one or two people who are fully engaged on this - they need a team and support and be an integral part of the company rather than a side kike.

Appendix 17 – Interview with Christian Tollestraup

Responsible for BA+MA program in engineering. It has to be an engineering education at AAU. That means that part of the curriculum/ learning objectives are at the technical aspects – manufacturing, systems etc., while KADK is connected to the school of architecture (which is also my professional background) – art oriented. Traditionally those two schools belonged to the ministry of culture while university belonged to the ministry of science. Now they are emerging under the ministry of science, so they are under pressure to be more scientific.

Their program is primarily product oriented – when I'm saying 'design' I think product design. The main focus is on materializing a solution. The question that you ask have a lot of applications depend on the perspective that you take: An overall strategic, research, knowledge perspective, is it a tactical perspective of positioning yourself, or the rule level – like a curriculum, or the operational level – the actual teaching and content of a class, lecture or a course module.

If we look at p.d as an overall theme, we have a problem because we are user oriented, but we also need to take into consideration a market – it's both a human and social science combined with technical science and natural science so It's a multi-paradigm perspective. When you are coming up with new product ideas to address existing needs that in itself is speaking into the demand of new products and the manufacturing of new stuff. So, from the overall perspective and how do you address ethically and morally the whole sustainability agenda you are into the business of making new stuff and that's requires new resources. There is something to be explained or at list to take a position – how do we address this intrigued dilemma. So that's one aspect to discuss.

We just started a PhD project – a different take on p.d vs. sustainability – it's about products that last. So instead of thinking about recycling, materials, optimization it's the counter trend of consumption. So if you buy a piece of furniture or other object that will last you 20-50 years, isn't that sustainable? That's at least one perspective of it instead of speaking into the frequent cycle of consumption, that's more trend and fashion oriented so it creates new demands. (giving an example of a mobile phone). Instead of thinking about optimizing the resources you can look on it in a totally different way – why don't we make something that will keep? You make a different offer – It's a different value proposition. (example: the golden age of Danish design). It's very difficult with products that are supported or driven by technology that changes all the time. Late note: It's not something we want to implement in the curriculum.

From an education perspective:
We have ignored it for a very long time for a couple of reasons. One of them is competition. At AAU CPH there is a sustainable design department (originally from DTU) so it doesn't make sense for us to market ourselves under this title from a strategic p.o.v. in the educational landscape.
Another aspect is that we come from a design and engineering fusion – that we did back in 1997 – the foundation of the program. In 2012 we changed the curriculum slightly and added the business perspective, so it needs to be fusible – desirable- viable. What we did with the current revision which isn't implemented yet – our thinking about it that instead of positioning ourselves as sustainable (because we are not) we are embedding the sustainability aspect into almost everything that we do as part of the

viability – one or two aspects of the environmental impact. Our take on it is off course you take it under consideration.

An example: The curriculum is structured by knowledge, skills and competences. For a project module: "along with other stuff you should be able to give form, construct a product proposal with the starting point of users and using products and needs to be able relate this to environmental consequences". It's very open because it is the legal level – it's a framework. In that one you can choose what aspect to focus on in the project.

How are the students supposed to know how to do it?

That depend on what do we provide them. This is the learning objective level, not the operation level. There is a huge different between what we set up as a framework and how do you execute it in terms of how you set up the learning space for this to happen and that we haven't done yet. But we have collogues working with different variations of sustainability for a very long time. What is important theme from a design perspective is that if you are talking with people who are interested and research in sustainability, resource consumption and life cycle analysis etc. – it is a very analytical approach – it's usually an engineering approach that infare optimization, and what we would like design students to be able to do no matters if it's an environmental impact, social value or whatever, we would like to work with both levels of concept – different kind of solution addressing the same need within the concept how to optimize certain parameters with consideration of resource consumption, energy consumption etc. For us it's important but we haven't figured out exactly how to do it yet because we haven't put the content but that would be one of the important aspects – not just to be trapped in the optimization paradigm – Less material, energy etc. Design can re-frame so why won't we do a completely different type of solution to address the need? It's not just a matter of optimization but also compare different types of overall approaches to a problem.

Obstacles and constrains

A curriculum is a framework that last 5-10 years and is political in a way. The current one we have is a way too detailed and constricting. In this revision we try to push out the boundaries, so the learning objectives are more open like the example I gave you before – I'm not stating the content, but you have to take it into consideration. We need to give some freedom to the people who are teaching or setting up the project module. From one way you need to be flexible enough to follow trends or competences you have inhouse and from the other side it needs to be precise enough for someone to figure out what is this education about. Curriculums are always too optimistic and very expensive – it's like a legal text. It's not really operational and it doesn't have to be because at the moment you make it you are locked and that's the way you have to execute it.

In all the courses there will be learning objectives that refers to sustainability just like there are learning objectives that refers to user involvement, usability, user friendliness, ergonomics constructing and manufacturing so it that sense it's just a part of anything else you need to consider.

Any further notes:

It's close to PBL – what is the type of problems you are looking at and then you frame it/ reframe it with the disciplines, needs and technics you need in order to deal with a problem. We try to push the human

perspective which is always present. We are always interested in the context and part of that is the environmental context. It is not necessarily something that we want, this is actually something that students are asking for. We can't ignore it. It's not that we are not wanting to do it, but students are asking so how do we deal with that? And it's extremely tricky to do that in product/ industrial design to handle this. So, I'm not sure we are looking for one way of doing it, we aren't, but I'm pretty sure we are looking for inviting the discussion of the sustainable aspect. Also, because no matter what you choose especially if we involve people with an analytical mindset of sustainability, It's always a matter of the angle. It's like a game you can't ween. It doesn't matter which approach you take for it – someone else can come with a different approach and dismantle it. Even the researches who are researching into sustainability don't have the answers how to do stuff. It's more important to introduce and bring in this aspect that you'll take a stand on it, that you are aware of what you do in terms of any given aspect of sustainability

If you could have done anything with no constrains what would it be?
Not much in the curriculum level because it's a matter of positioning. It's on the operational level: who is teaching what. Who is providing the research-based teaching to sustainability? This is where it becomes political and operational at the same time. I'd love to pick collogues to come and give input based on my network but it's not possible. There are some restrictions. Concerning the requisitions. It's a very political and economical factor that relate to whom.
No matter what we write down in the curriculum and all the official stuff it all boils down to who is in the room. It's the guy or girl on the floor that makes the difference because that's the interaction with the students. How you frame it, how you deliver it, what your focus point is, how you set up the assignment you do, what are the evaluations and evaluation criteria and stuff like that, So it's on the implementation level that you make the difference. Always. That's what controls the learning. Their skills and their focus and the way they translate this overall lingo down to something concrete

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[JUli/TKJ/2019]

Journalnr.: Enhed: IVD 30.05.19 Init: []

VISUELT DESIGN	**Studieretning: Visuel Kommunikation**	**BA**
Semesterplan:	**1. semester, blok 2**	
Modultype	**Programspecifikt modul GRUNDFORMER**	**15 ECTS**
Periode	21. oktober 2019 – 24. januar 2020	
Programansvar	Tine Kjølsen	
Modulansvar	Flemming Dupont	
Undervisere	Flemming Dupont, Nete Banke, Tine Kjølsen, Linda Hintz, Torsten Høgh Rasmussen, Clara Isaksson, Matthias J. E. Horneman-Thielcke m.fl.	
Indhold	Modulet har som grundlæggende formål at give den studerende en grundig introducerende viden om, og øvelse i programmet og studieretningernes grunddiscipliner samt introducere til program og projektrapport. Dette sker bl.a. ved at de studerende lærer grundlæggende farveteori, formgivningslove, og typografi. Gennem de stillede opgaver lærer de studerende desuden at arbejde med iterativ designmetode. Modulet indeholder ligeledes en forelæsningsrække som giver et grundlæggende overblik over relevante historiske greb indenfor grafisk design. Samlet set former programmodulet sig som et forløb af opgaver, der fokuserer på udviklingen og produktionen af trykte og digitale medier, med særligt fokus på typografiens rolle i disse, og med en række færdighedskurser, teorikurser, forelæsninger og workshops indlejret. Der lægges vægt på at den studerende skal blive fortrolig med sine værktøjer og teknikker i løbet af modulet og undervisningen tilrettelægges på en sådan måde, at den studerende opnår størst mulig øvelse med disse. Programmet mødes på tværs af de to studieretninger ugentligt i faget *Visualisering*, hvis formål er at øve og styrke den studerendes evne til at artikulere observationer og ideer visuelt. Derudover er der programundervisning i grundlæggende typografi og opbygning af digital portfolio, samt en fælles fagligt orienteret studietur.	

	Sideløbende er der sammen med de øvrige programmer på Designskolen tværgående undervisning i "Designhistorie og æstetikteori" (5 ETCS point).
Undervisningsform	Workshops, forelæsninger, undervisning i program- og rapport skrivning, individuel vejledning, vejledning i fælles forum og fælles gennemgange og kritiker. Undervisningen foregår dels i studiesalen bygning 90, øverste dæk og dels i auditorier og ofte ved at underviseren introducerer en færdighed og den studerende derpå øver sig under vejledning og i korte studieopgaver. Herudover vil der også være indlejret en række mindre projekter undervejs: design af opslag, design af lille publikation og design af bog, ligesom der vil være læsning af tekster, foredrag om fagspecifik historie, research og skrivning af essay, og virksomhedsbesøg.
Samarbejdspartnere	Gæsteundervisere, oplægsholdere og KADK:LAB printværkstedet
Krav til aflevering	Du vil løbende skulle præsentere skitser og løsninger på delopgaver undervejs i forløbet. Til den endelige eksamen medbringes alt materiale arrangeret i overskuelig form. Herunder indgår også materialet fra Visualisering. En vurdering af semestrets samlede produktion og progression vil udgøre den endelige eksamen. Du skal løse den på studieturen stillede opgave, eller den tilsvarende opgave for de studerende som ikke deltager i studieturen. Din besvarelse vil blive vurderet umiddelbart efter aflevering og materialet skal ikke medbringes til den endelige eksamen. Der skal endvidere afleveres et 5 siders essay. I essayet skal du reflektere over en given skrifttype og hvorfor denne er interessant i dine øjne. Essayet er en integreret del af delforløbet Typografi 2, og en mere detaljeret brief på essayet vil blive givet ved starten af dette delforløb. Udvalgt arbejde fra semesteret skal tilføjes i et digitalt portfolio.
Intern censur	Elias Stenalt Werner

43	MAN 21.10.19	*STUDIETUR*
	TIR 22.10.19	*STUDIETUR*
	ONS 23.10.19	*STUDIETUR*
	TOR 24.10.19	*STUDIETUR*

	FRE	25.10.19	*STUDIETUR*
44	MAN	28.10.19	9-15: Designhistorie og æstetikteori - forelæsning og skriveworkshop 1
	TIR	29.10.19	9-12: Designhistorie og æstetikteori - Forelæsning og workshop.
	ONS	30.10.19	Du skal, forud for denne uge, have anskaffet dig et kalligrafisæt. Programmet har en aftale med Tutein & Koch om et godt tilbud. Du vil få nærmere besked om dette. Du skal sørge for, forud for denne uge, at have installeret programmerne Glyphs ,InDesign og Illustrator på din computer. 09.00–10.00: 90.2.01: Intro til semester, modulansvarlig og læringsmål/ Flemming Dupont og Tine Kjølsen / AUD 15 10.00–16.00: 90.1.25: Kalligrafi / Clara Jullien Isaksson
	TOR	31.10.19	09.00–16.00: 90.1.25: Kalligrafi / Clara Jullien Isaksson
	FRE	01.11.19	09.00–16.00: 90.1.25: Kalligrafi / Clara Isaksson
45	MAN	04.11.19	9.00–12.00: skolerådssalen: Glyphs/ Linda Hintz 13.00–16.00: skolerådssalen: Kalligrafi / Clara Jullien Isaksson
	TIR	05.11.19	9.00–12.00: skolerådssalen: Glyphs/ Linda Hintz 13.00–16.00: skolerådssalen Kalligrafi / Clara Jullien Isaksson
	ONS	06.11.19	9.00-15.00: Designhistorie og æstetikteori - forelæsning og workshop om farvelære
	TORS	07.11.19	09.00–12.00: skolerådssalen: Glyphs / Linda Hintz 14.30–16.00: skolerådssalen Forelæsning; Plakatens historie / Peter Gyllan
	FRE	08.11.19	9.00–12.00: 90.2.01: Typografi / Flemming Dupont og Torsten Høgh Rasmussen 13.00–16.00: skolerådssalen Glyphs / Linda Hintz
46	MAN	11.11.19	9.00–16.00: AUD 15: Typografi / Flemming Dupont og Torsten Høgh Rasmussen
	TIR	12.11.19	9.00–12.00: Visualisering ved studiepladserne / Flemming Dupont 13.00–16.00: 90.2.01: Glyphs/ Linda Hintz
	ONS	13.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Produkt +: eftermiddagsbesøg på KADK biblioteket. For Visuelt Design læsning af pensum.
	TOR	14.11.19	09.00–12.00: 90.2.01: Glyphs /Linda Hintz 14.30–16.00: 90.2.01: Forelæsning; llustrationens historie ???
	FRE	15.11.19	9.00–12.00: 90.2.01: Typografi / Flemming Dupont og Torsten Høgh Rasmussen 13.00–16.00: 90.2.01: Glyphs / Linda Hintz
47	MAN	18.11.19	9.00–12.00: AUD 15: Glyphs/ Linda Hintz 13.30–14.45: AUD 15: Forelæsning: Skrifthistorie / Elias Stenalt
	TIR	19.11.19	9.00–12.00: Visualisering ved studiepladserne / Flemming Dupont 13.00–17.00: Åbent håndsætteri håndsætteri ved Matthias J. E. Horneman-Thielcke i typolab bygning 90
	ONS	20.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Visuelt Design: eftermiddagsbesøg på KADK's bibliotek. For Produkt+: læsning af pensum.

	TOR 21.11.19	9.00–12.00: 90.1.25 /Typografi / Flemming Dupont & Torsten Høgh Rasmussen ved studiepladserne 13.00–16.00: Glyphs / Linda Hintz / lokale 90.1.25
	FRE 22.11.19	9.00–12.00: 90.2.01: Typografi / Flemming Dupont & Torsten Høgh Rasmussen 13.00–15.00: Essay: Præsentation af semesterrapport opgaven / research / vejledning / Vejledning ved studieplads / Flemming Dupont
48	MAN 25.11.19	9.00–12.00: 90.2.01: Layout / Flemming Dupont & Torsten Høgh Rasmussen 13.00–16.00: Essay: Selvstændigt arbejde med semesterrapport skrivning
	TIR 26.11.19	9.00–12.00: Visualisering ved studiepladerne / Flemming Dupont 13.00–16.00: AUD 15: Layout / Flemming Dupont & Torsten Høgh Rasmussen
	ONS 27.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Produkt +: eftermiddagsbesøg på Design Museum Danmark. For Visuelt Design: læsning af pensum.
	TOR 28.11.19	9.00–12.00: 90.2.01: Layout / Flemming Dupont & Torsten Høgh Rasmussen 13.00–15.00: 90.1.25: Forelæsning; Piktogrammer / Pia Pedersen
	FRE 29.11.19	9.00–12.00: 90.2.01: Layout / Flemming Dupont & Torsten Høgh Rasmussen 13.00–16.00: Semesterrapport: Vejledning ved studieplads / Flemming Dupont
49	MAN 02.12.19	13.00–16.00: Semesterrapport: Selvstændigt arbejde med skrivning
	TIR 03.12.19	9.00–12.00: Visualisering ved studiepladerne / Flemming Dupont 13.00–17.00: Åbent håndsætteri ved Matthias J. E. Horneman-Thielcke
	ONS 04.12.19	9-15: Designhistorie og æstetiteori - forelæsning og workshop. Visuelt Design: eftermiddagsbesøg på Design Museum Danmark. For Produkt+ læsning af pensum.
	TOR 05.12.19	9.00–14.00: selvstændigt designarbejde 14.30–16.00: AUD 16: Forelæsning; Visuel Identiteters historie / Morten Noer Andersen
	FRE 06.12.19	9.00–16.00: Semesterrapport: Selvstændigt arbejde med skrivning
50	MAN 09.12.19	9.00–16.00: 90.2.01: Feedback på semesterrapporter / Flemming Dupont
	TIR 10.12.19	9.00–12.00: Visualisering ved studiepladerne / Flemming Dupont 13.00–14.00: Intro til Behance portfolio / NN / *AUD 16*
	ONS 11.12.19	Designhistorie og æstetikteori - skriveworkshop 2 med vejledning
	TOR 12.12.19	Designhistorie og æstetikteori - skrive teoriopgave
	FRE 13.12.19	Designhistorie og æstetikteori - skrive teoriopgave
51	MAN 16.12.19	Designhistorie og æstetikteori – skrive teoriopgave
	TIR 17.12.19	Designhistorie og æstetikteori – skrive teoriopgave
	ONS 18.12.19	Aflevering af teoriopgave digitalt, mellem kl. 10 – 12 i Studenterservice
	TOR 19.12.19	Julefrokost

	FRE 20.12.19	**JULEFERIE / SELVSTUDIE**
1	TIR 31.12.19	
	ONS 01.01.20	
	TOR 02.01.20	9.00-12.00: (Skolerådssalen): Introduktion til forløbet bogdesign – Indeholdende introopgave, håndindbindning af notesbog, bogdesignopgave (hovedopgave) samt diverse forelæsninger og virksomhedsbesøg. **OBS der vil være studenter udgifter til printning i dette forløb. (tkj med frem til 12.00)skolerådssalen booket hele dagen** Kick-off-forelæsning: Om bogdesign med introduktion til introopgave / Nete Banke. Herefter arbejde med introopgave.
	FRE 03.01.20	9.00-10.00: Selvstændigt arbejde med introopgave. 10.00-12.00: Skolerådssalen: Uformel gennemgang af introopgave. 13.00-15.00: Skolerådssalen: Forelæsning om bogens historie / Christian Kaaber. **(tkj med frem hele dagen)skolerådssalen booket hele dagen**
2	MAN 06.01.20	9.00-10.30: Skolerådssalen: Præsentation af bogdesign-opgaven (hovedopgaven). 10.30-12.00: Skolerådssalen: Forelæsning: Typografiske tips ved bogdesign og introduktion til opgaven: notesbogen**(tkj med frem til 12.00) skolerådssalen booket frem til 12** 13.30-ca. 15.30: Virksomhedsbesøg hos bogdesigner i København.
	TIR 07.01.20	9.00-16.00: Selvstændigt arbejde med bogdesign-opgaven.
	ONS 08.01.20	9.00-11.30: håndbogbinder Iben Andersen**(tkj med frem til 12.00)** 13.00-16.00: Håndindbindning af notesbogen / Iben Andersen **skolerådssalen booket hele dagen**
	TOR 09.01.20	9.30-11.00: Virksomhedsbesøg: Trykkeri 13.00-16.00: Selvstændigt arbejde med bogdesign-opgaven.
	FRE 10.01.20	9.00-12.00: **Skolerådssalen:** Midtvejsgennemgang af bogdesign-opgaven. (i 2 hold) Aflevering af semesterrapport kl. 10-12 i Studenterservice 13.00-16.00: Selvstændigt arbejde med bogdesign-opgaven. **(tkj med hele dagen) skolerådssalen**
3	MAN 13.01.20	9.00-12.00: Selvstændigt arbejde med bogdesign-opgaven. 13.00-14.00: **Skolerådssalen:** Orientering om papir og papirkvalitet / Arctic Paper. **(tkj med 12.00-15)** 14.30-15.00: Printcenterorientering / Debora Domela.
	TIR 14.01.20	9.00-12.00: Selvstændigt arbejde med opgave med vejledning. **(tkj med frem til 12.00) skolerådssalen reserveret** 13.00-16.00: Selvstændigt arbejde med opgave.
	ONS 15.01.20	9.00-12.00: Selvstændigt arbejde med opgave med vejledning. 13.00-16.00: Selvstændigt arbejde med opgave. **(tkj kan være med om eftermiddagen?)**
	TOR 16.01.20	9.00-11.00: Selvstændigt arbejde med opgave med vejledning. 11.00-11.30: Modulevaluering orientering/ Flemming Dupont og Tine Kjølsen 13.00-15.30: Selvstændigt arbejde med opgave. 15.30-16.00 - Opsamling og refleksion vedr. modulevaluering/ Flemming Dupont / Tine Kjølsen

	FRE 17.01.20	9.00-16.00: Skolerådssalen: Afsluttende gennemgang af bogdesign-opgaven og afrunding./ bookning **skolerådssalen reserveret**
4	MAN 20.01.20	9.00-16.00 forberedelse til eksamen
	TIR 21.01.20	9.00-16.00: AUD 16: Eksamen / intern censor Elias Stenalt Werner
	ONS 22.01.20	9.00-16.00: AUD 16 Eksamen / intern censor Elias Stenalt Werner
	TOR 23.01.20	kl.9.00-12.00 Åbent håndsætteri ved Matthias J. E. Horneman-Thielcke i typolab bygning 90 / *Oprydning af studiepladser*
	FRE 24.01.20	*Oprydning af studiepladser / udstilling og fernisering af bøger i IMPERIET*

PENSUMLISTE 200 sider, bundet

Sider	Titel	Forfatter
100	Tegn & Tryk. Typografisk opsætning	Elias S. Werner og Rasmus S. Troelsen
100	Kompendium til Skriftdesign I	Elias Stenalt Werner
40	Farven. Papiret	Frank Cerri

(du kan lave flere felter efter behov)

PDF fil af opgivet tekster uploades i mappe i modulrum

Værkreferencer

Årstal	Titel + evt. link til foto	Designer/ Kunstner

(du kan lave flere felter efter behov)

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JUNI/TKJ/CFA
2019]

Journalnr.: Enhed: IVD Init: []

VISUELT DESIGN	**Studieretning: Spil og interaktion**	**BA**
Semesterplan:	**1. semester, blok 2**	
Modultype	**Programspecifikt modul GRUNDFORMER**	**15 ECTS**
Periode	21. oktober 2019 – 24. januar 2020	
Programansvar	Tine Kjølsen	
Modulansvar	Alessandro Canossa	
Undervisere	Jesper Juul, Caroline Fangel, Richard Baxter, Benno Lüders, Charlene Putney, Mikkel Grann, Alessandro Canossa m fl	
Indhold	Modulet har som grundlæggende formål at give den studerende en grundig introducerende viden om, og øvelse i programmet og studieretningernes grunddiscipliner samt introducere til program og projektrapport. Dette sker bl.a. ved at de studerende lærer grundlæggende farveteori, formgivningslove, og typografi. Gennem de stillede opgaver lærer de studerende desuden at arbejde med iterativ designmetode. Programmet mødes ugentligt samlet i faget *Visualisering,* hvis formål er øve og styrke den studerendes evne til at artikulere observationer og ideer visuelt. Derudover er der fælles programundervisning i grundlæggende typografi og opbygning af digital portfolio, samt en fælles fagligt orienteret studietur. Modulet indeholder ligeledes en forelæsningsrække som giver et grundlæggende overblik over såvel spildesigns historie. Sideløbende er der sammen med de øvrige programmer på Designskolen tværgående undervisning i "Designhistorie og æstetikteori" (5 ETCS point). Modulet former sig som et samlet forløb af opgaver, med en række færdighedskurser, teorikurser, forelæsninger og workshops indlejret. Der fokuseres dels på udviklingen af grundlæggende færdigheder i bl.a. 2D- og 3D grafik til spil, og dels på udviklingen af grundlæggende færdigheder i interaktionsdesign.	

	Igennem modulet undervises der i produktion af digitale spilprototyper og interaktionsdesign, og der introduceres til produktions pipelines og programmering. De studerende deltager i en tredages game jam med de andre årgange på programmet, hvor de udvikler spil. De studerende undervises endvidere i computerspillets historie, om computerspilteori, og om grundlæggende spildesign. Derudover er der fælles programundervisning i grundlæggende typografi og opbygning af digital portfolio, samt en fælles fagligt orienteret studietur.
Undervisningsform	Workshops, forelæsninger, undervisning i program- og rapport skrivning, individuel vejledning, vejledning i fælles forum og fælles gennemgange og kritiker. Undervisningen foregår dels i studiesalene og dels i auditorier og ofte ved at underviseren introducerer en færdighed og den studerende derpå øver sig under vejledning og i korte studieopgaver. Herudover vil der også være indlejret en række mindre projekter undervejs: design af opslag, design af lille publikation og design af bog, ligesom der vil være læsning af tekster, foredrag om fagspecifik historie, research og skrivning af essay, og virksomhedsbesøg.
Samarbejdspartnere	Gæsteundervisere, oplægsholdere og KADK:LAB printværkstedet
Krav til aflevering	Du vil løbende skulle præsentere skitser og løsninger på delopgaver undervejs i forløbet. Til den endelige eksamen medbringes alt materiale arrangeret i overskuelig form. Herunder indgår også materialet fra Visualisering. En vurdering af semestrets samlede produktion og progression vil udgøre den endelige eksamen. Du skal løse den på studieturen stillede opgave, eller den tilsvarende opgave for de studerende som ikke deltager i studieturen. Din besvarelse vil blive vurderet umiddelbart efter aflevering og materialet skal ikke medbringes til den endelige eksamen. *Der skal endvidere afleveres et 5 siders essay. I essayet skal du reflektere over en ~~given skrifttype~~ og hvorfor denne er interessant i dine øjne. Essayet er en integreret del af delforløbet Typografi 2, og en mere detaljeret brief på essayet vil blive givet ved starten af dette delforløb.* Udvalgt arbejde fra semesteret skal tilføjes i et digitalt portfolio.
Intern censur	Martin Sønderlev Christensen

43	MAN	21.10.19	*STUDIETUR*
	TIR	22.10.19	*STUDIETUR*
	ONS	23.10.19	*STUDIETUR*
	TOR	24.10.19	*STUDIETUR*
	FRE	25.10.19	*STUDIETUR*
44	MAN	28.10.19	9-15: Designhistorie og æstetikteori - forelæsning og skriveworkshop 1
	TIR	29.10.19	9-12: Designhistorie og æstetikteori - Forelæsning og workshop.
	ONS	30.10.19	Kl.9.00–10.00: 90.2.20: Intro til semester, modulansvarlig og læringsmål 10.00-16.00: From paper prototype to digital wireframe 16:00-20:00 Game Jam på tværs af årgangene
	TOR	31.10.19	9:00-16:00 Game Jam på tværs af årgangene
	FRE	01.11.19	9:00-16:00 Game Jam på tværs af årgangene
45	MAN	04.11.19	9.00-16.00: Unity med Richard Baxter
	TIR	05.11.19	9.00-16.00: Spilhistorie med Mikkel Grann
	ONS	06.11.19	9.00-15.00: Designhistorie og æstetikteori - forelæsning og workshop om farvelære
	TOR	07.11.19	9.00 – 16.00 Unity med Richard Baxter
	FRE	08.11.19	9.00 – 16.00 Unity med Richard Baxter
46	MAN	11.11.19	9.00 – 16.00 Unity med Richard Baxter
	TIR	12.11.19	9.00–12.00: Visualisering / Flemming Dupont 13.00 – 16.00: Spilhistorie Mikkel Grann
	ONS	13.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Produkt +: eftermiddagsbesøg på KADK biblioteket. For Visuelt Design læsning af pensum.
	TOR	14.11.19	9.00 – 16.00 Unity classwork
	FRE	15.11.19	9.00 – 16.00 Unity med Caroline Fangel
47	MAN	18.11.19	9.00 – 16.00 Unity med Caroline Fangel
	TIR	19.11.19	9.00–12.00: Visualisering / Flemming Dupont 13.00-16.00 Spilhistorie med Mikkel Grann
	ONS	20.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Visuelt Design: eftermiddagsbesøg på KADK's bibliotek. For Produkt+: læsning af pensum.
	TOR	21.11.19	9.00 – 16.00 Unity med Richard Baxter
	FRE	22.11.19	9.00 – 16.00 Unity med Richard Baxter
48	MAN	25.11.19	9.00 – 16.00 Narrative & Storytelling with Charlene Putney
	TIR	26.11.19	9.00–12.00: Visualisering / Flemming Dupont 13.00-16.00 Spilhistorie med Mikkel Grann
	ONS	27.11.19	9-15: Designhistorie og æstetikteori - forelæsning og workshop Produkt +: eftermiddagsbesøg på Design Museum Danmark. For Visuelt Design: læsning af pensum.
	TOR	28.11.19	9.00 – 16.00 2D animation med Caroline Fangel

	FRE	29.11.19	9.00 – 16.00 3D animation med Caroline Fangel
49	MAN	02.12.19	9.00 – 16.00 Narrative & Storytelling with Charlene Putney
	TIR	03.12.19	9.00–12.00: Visualisering / Flemming Dupont 13.00 – 16.00: Spilhistorie Mikkel Grann
	ONS	04.12.19	9-15: Designhistorie og æstetiteori - forelæsning og workshop. Visuelt Design: eftermiddagsbesøg på Design Museum Danmark. For Produkt+ læsning af pensum.
	TOR	05.12.19	9.00 – 16.00 2D animation med Caroline Fangel
	FRE	06.12.19	9.00 – 16.00 Narrative & Storytelling with Charlene Putney
50	MAN	09.12.19	9.00 – 16.00 Narrative & Storytelling with Charlene Putney
	TIR	10.12.19	9.00–12.00: Visualisering / Flemming Dupont 13.00–14.00: Intro til Behance portfolio / NN/ AUD 16
	ONS	11.12.19	Designhistorie og æstetikteori - skriveworkshop 2 med vejledning
	TOR	12.12.19	Designhistorie og æstetikteori – skrive teoriopgave
	FRE	13.12.19	Designhistorie og æstetikteori - skrive teoriopgave
51	MAN	16.12.19	Designhistorie og æstetikteori - skrive teoriopgave
	TIR	17.12.19	Designhistorie og æstetikteori – skrive teoriopgave
	ONS	18.12.19	Aflevering af teoriopgave digitalt mellem kl. 10 – 12 i Studenterservice
	TOR	19.12.19	Julefrokost
	FRE	20.12.19	**JULEFERIE / SELVSTUDIE**

1	TIR	31.12.19	
	ONS	01.01.20	
	TOR	02.01.20	Project
	FRE	03.01.20	Project
2	MAN	06.01.20	Project – supervision – exam preparation
	TIR	07.01.20	Project – supervision and kl 13-16.00 Workshop: layout and typography med Tine Kjølsen
	ONS	08.01.20	Project – supervision and kl 13-16.00 Workshop: layout and typography med Tine Kjølsen
	TOR	09.01.20	9.00 – 16.00 Narrative & Storytelling with Charlene Putney
	FRE	10.01.20	Aflevering af semesterrapport kl. 10-12 i Studenterservice
3	MAN	13.01.20	Project - supervision – exam preparation
	TIR	14.01.20	Project
	ONS	15.01.20	Prepare exam
	TOR	16.01.20	Prepare exam
	FRE	17.01.20	Prepare exam
4	MAN	20.01.20	Prepare exam
	TIR	21.01.20	9.00-16.00: Eksamen / intern censor Martin Sønderlev Christensen
	ONS	22.01.20	9.00-16.00: Eksamen / intern censor Martin Sønderlev Christensen

	TOR 23.01.20	*Oprydning af studiepladser*
	FRE 24.01.20	*Oprydning af studiepladser*

PENSUMLISTE		200 sider, bundet
Sider	**Titel**	**Forfatter**
100	Tegn & Tryk. Typografisk opsætning	Elias S. Werner og Rasmus S. Troelsen
35 - 53	In-Game: from immersion to incorporation	Gordon Calleja
1 - 246	Game Design Workshop	Tracy Fullerton
23 - 54	Half Real	Jesper Juul
11-21, 31-105 119-283	Rules of Play – Game Design Fundamentals	Katie Salen, Eric Zimmerman

(du kan lave flere felter efter behov)

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Værkreferencer		
Årstal	**Titel + evt. link til foto**	**Designer/ Kunstner**

(du kan lave flere felter efter behov)

Det Kongelige Danske Kunstakademis Skoler
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[23.11.2018]

Journalnr.: Enhed: [institut] Init: [nkb]

Visuelt Design/ VK	**Fortælling og forløb**	**BA**
Semesterplan:	**2. semester, blok 2**	
Modultype	**Programundervisning**	**15 ECTS**
Periode	18. marts 2019 – 28. juni 2019	
Programansvar	Tine Kjølsen	
Modulansvar	Flemming Dupont og Jesper Juul	
Undervisere	Flemming Dupont, Jesper Juul, Pia Pedersen, Elias Stenalt Werner, Andreas Emenius, Caroline Fangel, Peter Urban, Andreas Refsgaard, Andy Clymer, Elizabeth Fox Jensen, Octavio Pardo,Esben Fisker, Louise Rosenkrands,Tatiana Lyng samt indidviduel vejledning med Rasmus Spanggaard Rasmussen med hensyn til Design og Samfund	
Indhold	**Program indhold** Hele programmet mødes ugentligt på tværs i faget *Visualisering,* hvis formål er at øve og styrke den studerendes evne til at artikulere og formgive observationer og ideer visuelt. Visualisering er en række onsdage hvor der arbejdes med at tegne og illustrere på mange forskellige måder analogt og digitalt. De studerende arbejder derudover i et fælles forløb med interface- og user experience design, interaktion og UX, med henblik på bl.a. app design og andre digitale formater. Sammen med dette afholdes et project jam, hvor de studerende skal udvikle designløsninger over en uge. *Sideløbende med undervisningen på program og studieretning, er der tværgående undervisning i "Design og samfund" (5 ETCS point).* **Specifikt indhold for studieretning Visuel Kommunikation** I den studieretningsspecifikke del af modulet arbejdes der med at udvikle en række forskellige visuelle fortællinger. Der arbejdes såvel med lineære som ikke-lineære fortællinger, og med analoge og digitale medier. Formålet er at øve og styrke færdighederne i arbejdet med de analoge og digitale medier, herunder både den grafiske formgivning, opsætning, narration og programmering/prototyping af digitale oplevelser. Gennem hele modulet stilles der skarpt på evnen til udvikle fortællinger, herunder formålet med at fortælle dem, og artikulere disse visuelt i forskellige medier. Dette gælder såvel i form af illustrationer som gennem f.eks. datavisualisering og formgivning af bogstaver.	

	Der lægges vægt på at den studerende skal blive fortrolig med sine værktøjer og teknikker i løbet af modulet og undervisningen tilrettelægges på en sådan måde, at den studerende opnår størst mulig øvelse med disse. **Specifikt indhold for studieretning Spil- og Interaktionsdesign** På dette semester arbejder de studerende først med at fremstille nogle mindre spilprototyper. Dernæst skal de tage en prototype og udfolde den til et fuldt spil, med et konsistent visuelt univers, og med udvikling af spillets grundlæggende mekanikker til at give variation og udfordring til spillerne. De studerende introduceres til design og environment design i 2d og 3d. De studerende lærer om at foretage strukturerede spiltests, med forståelse af målgrupper, og de studerende lærer teori om computerspil fra en sociologisk vinkel. Der lægges vægt på at de studerende lærer at forstå nutidige genrer og tendenser inden for spil. Modulet indeholder en kort produktion hvor de studerende arbejder som visual artists sammen med de kandidatstuderende, der har rollen som art directors.
Undervisningsform	Modulet består af en række undervisningselementer, projektintroduktion, forelæsninger, vejledning i grupper og individuelt, projectjam og workshops samt forelæsninger.
Samarbejdspartnere	Gæsteundervisere, oplægsholdere og KADK:LAB printværkstedet
Krav til aflevering	Der forventes fuld tilstedeværelse i projektperioden og at dette afspejler sig i det afleverede fuldt udfoldede projektarbejde, derudover afleveres en projektrapport på 5 sider. Studieretning Visuel Kommunikation, pensum bundet, 150 sider akademisk litteratur og faglitteratur inden for emnerne: • Kommunikation • Narration • Programmering Uploaded:" levende billede – fortælling og forløb BA2" Studieretning Spil- og interaktionsdesign pensum bundet, 150 sider akademisk litteratur og faglitteratur inden for emnerne: • Spiltest • Programmering • Design af spil-forløb, med udvikling af core mechanics. • Computerspil fra et sociologisk perspektiv

	• Visuelt design af karakterer og environments
Ekstern censur	NN

Tidsplan for undervisningsaktiviteter

12	MAN 18.03.19	09.00–16.00: Modulstart: Fortælling og forløb - Digital illustration / Esben Fisker, Arthur Steijn og Flemming Dupont / lokale 90.1.20
	TIR 19.03.19	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker, Arthur Steijn og Flemming Dupont
	ONS 20.03.19	*Fællesfagligt tema: Design og samfund kl. 9-12, se særskilt semesterplan*
	TOR 21.03.19	09.00–12.00: Fortælling og forløb - Digital illustration / KODE / Peter Urban *12.00*–16.00: Fortælling og forløb - Digital illustration / Esben Fisker, Arthur Steijn og Flemming Dupont
	FRE 22.03.19	*Fællesfagligt tema: Design og Samfunds kl.9-12, se særskilt semesterplan.* 12.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker, Arthur Steijn og Flemming Dupont
13	MAN 25.03.19	09.00–16.00: Project JAM – app UI/ UX forløb sammen med 4 sem/ Tatiana Lyng
	TIR 26.03.19	09.00–16.00: Project JAM – app UI/ UX forløb sammen med 4 sem Tatiana Lyng
	ONS 27.03.19	09.00–16.00: Project JAM – app UI/ UX forløb sammen med 4 sem/ Tatiana Lyng
	TOR 28.03.19	*Fællesfagligt tema: Design og samfund kl. 10-12, se særskilt semesterplan.* Kl 12.30-16.30 Project JAM – app UI/ UX forløb sammen med 4 sem/ Tatiana Lyng
	FRE 29.03.19	*Fællesfagligt tema: Design og samfund kl. 10-12, se særskilt semesterplan.* Kl 12.30-16.30 Project JAM – app UI/ UX forløb sammen med 4 sem / Tatiana Lyng
14	MAN 01.04.19	09.00–16.00: Fortælling og forløb - Kode / Peter Urban
	TIR 02.04.19	09.00–12.00: Visualisering / Caroline Fangel 13.00–16.00: Fortælling og forløb - Kode / Peter Urban
	ONS 03.04.18	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker og Flemming Dupont
	TOR 04.04.19	*Fællesfagligt tema: Design og samfund kl. 10-12, se særskilt semesterplan*
	FRE 05.04.19	*Fællesfagligt tema: Design og samfund kl. 10-12, se særskilt semesterplan*
15	MAN 08.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker og Flemming Dupont
	TIR 09.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker og Flemming Dupont

	ONS 10.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker og Flemming Dupont
	TOR 11.04.19	*Fællesfagligt tema: Design og samfund kl. 9-12, se særskilt semesterplan*
	FRE 12.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Esben Fisker og Flemming Dupont
16	MAN 15.04.19	Opgaveskrivning /Design og Samfund / selvstændigt arbejde med den skriftlige opgave
	TIR 16.04.19	Opgaveskrivning /Design og Samfund / selvstændigt arbejde med den skriftlige opgave
	ONS 17.04.19	Opgaveskrivning /Design og Samfund / selvstændigt arbejde med den skriftlige opgave
	TOR 18.04.19	Skærtorsdag
	FRE 19.04.19	Langfredag
17	MAN 22.04.19	2. påskedag
	TIR 23.04.19	09.00–12.00: Visualisering / Caroline Fangel 13.00–16.00: Fortælling og forløb – Kode / Peter Urban
	ONS 24.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Louise Rosenkrands og Flemming Dupont
	TOR 25.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Louise Rosenkrands og Flemming Dupont
	FRE 26.04.19	09.00–16.00: Fortælling og forløb - Digital illustration / Louise Rosenkrands og Flemming Dupont
18	MAN 29.04.19	09.00–16.00: Fortælling og forløb – Infografik / Forelæsning og workshop Pia Pedersen
	TIR 30.04.19	09.00–12.00: Visualisering / Caroline Fangel 13.00–16.00: Fortælling og forløb – Infografik / præsentation fra workshop Pia Pedersen
	ONS 01.05.19	09.00–16.00: Fortælling og forløb – Kode / Peter Urban
	TOR 02.05.19	09.00–16.00: Fortælling og forløb – Infografik / forelæsning og vejledning / Pia Pedersen
	FRE 03.05.19	09.00–16.00: Fortælling og forløb – Infografik / Pia Pedersen m fl.
19	MAN 06.05.19	*Aflevering af opgave til Design og Samfund mellem kl. 10 og 12 i Studenterservice*
	TIR 07.05.19	09.00–12.00: Visualisering Caroline Fangel /opstart projektrapport Tine Kjølsen 13.00–16.00: Forelæsning: Louise Rosenkrands
	ONS 08.05.19	09.00–16.00: Fortælling og forløb – Infografik / Pia Pedersen
	TOR 09.05.19	09.00–16.00: Fortælling og forløb – Infografik / Pia Pedersen
	FRE 10.05.19	09.00–16.00: Fortælling og forløb – Infografik / endelig præsentation /Pia Pedersen m fl.
20	MAN 13.05.19	09.00–16.00: Kode / lettering og variable font Andy Clymer og Elias Stenalt Werner
	TIR 14.05.19	09.00–15.00: 90.2.01: Introduction til workshop / Elias Werner & Andy Clymer 15.30–16.30: 90.2.01: Talk / Andy Clymer

	ONS 15.05.19	09.00–15.00: 90.2.01: Tooling / Andy Clymer 09.00–15.00: Arbejdsbordene: Variable fonts / Elias Werner
	TOR 16.05.19	09.00–15.00: 90.2.01: Tooling / Andy Clymer 09.00–15.00: Arbejdsbordene: Variable fonts / Elias Werner
	FRE 17.05.19	Bededag
21	MAN 20.05.19	09.00–16.00: 90.2.01: Kreativ kode / Andreas Refsgaard 09.00–15.00: Arbejdsbordene: Tooling / Andy Clymer
	TIR 21.05.19	09.00–16.00: 90.2.01: Kreativ kode / Andreas Refsgaard 09.00–15.00: Arbejdsbordene: Tooling / Andy Clymer
	ONS 22.05.19	09.00–16.00: 90.2.01: Kreativ kode / Andreas Refsgaard 09.00–15.00: Arbejdsbordene: Tooling / Andy Clymer
	TOR 23.05.19	09.00–16.00: 90.2.01: Kreativ kode / Andreas Refsgaard 09.00–15.00: Arbejdsbordene: Tooling / Andy Clymer
	FRE 24.05.19	09.00–12.00: 90.2.01: Kreativ kode / Andreas Refsgaard 09.00–12..00: Arbejdsbordene: Tooling / Andy Clymer 13.15–15.00: 90.2.01: Udstilling af projekter / fernisering / Andy Clymer, Andreas Refsgaard, Elias Stenalt Werner
22	MAN 27.05.19	Selvstændigt arbejde med projektrapport
	TIR 28.05.19	*Aflevering af projektrapport mellem kl. 10 og 12 i Studenterservice*
	ONS 29.05.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	TOR 30.05.19	Kristi Himmelfart
	FRE 31.05.19	Digital fortælling/afsluttende opgave, selvstændigt arbejde
23	MAN 03.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	TIR 04.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	ONS 05.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	TOR 06.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius og Tine Kjølsen
	FRE 07.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
24	MAN 10.06.19	Pinse
	TIR 11.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	ONS 12.06.19	Digital fortælling/afsluttende opgave og mellemgennemgang / Andreas Emenius og Flemming Dupont
	TOR 13.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	FRE 14.06.19	Digital fortælling/afsluttende opgave / kl.13-15.00 uploade til digital portfolio Elizabeth Fox Jensen / foyeen bygn 90
25	MAN 17.06.19	Kl.9.00-12.00 Digital fortælling/afsluttende opgave / Andreas Emenius og Tine Kjølsen
	TIR 18.06.19	Digital fortælling/afsluttende opgave / Andreas Emenius
	ONS 19.06.19	Kl.9.00-12.00 Digital fortælling/afsluttende opgave og **evaluering** og opfølgning / Flemming Dupont
	TOR 20.06.19	Digital fortælling/afsluttende opgave, selvstændigt arbejde
	FRE 21.06.19	Kl.9.00-12.00 Digital fortælling/afsluttende opgave / Andreas Emenius og Tine Kjølsen

26	MAN 24.06.19	Kl.9.00-16.00 Eksamen, eksaminator Flemming Dupont og ekstern censor
	TIR 25.06.19	Kl.9.00-16.00 Eksamen, eksaminator Flemming Dupont og ekstern censor
	ONS 26.06.19	Kl.9.00-16.00 Eksamen, eksaminator Flemming Dupont og ekstern censor
	TOR 27.06.19	*Oprydning studiepladser*
	FRE 28.06.19	*Oprydning studiepladser*

PENSUMLISTE 150 sider, bundet

Sider	Titel	Forfatter
89	Levende billeder – fortælling og forløb BA 2	Redigeret af Flemming Dupont

(du kan lave flere felter efter behov)

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Værkreferencer

Årstal	Titel + evt. link til foto	Designer/ Kunstner

(du kan lave flere felter efter behov)

Det Kongelige Danske Kunstakademis Skoler
for Arkitektur, Design og Konservering
Designskolen

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Danmark

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ESKJ/[October 2019]

Journalnr.: Enhed: TU Init: []

BEGGE BA-PROGRAMMER	**Designetik og Bæredygtighed**	**BA**
Semesterplan:	**3. semester, blok 2**	
Modultype	**KDTU**	
Periode	23. oktober – 20.11. 2019	
Programansvar	Malene Kristensen og Tine Kjølsen	
Modulansvar	Else Skjold	
Undervisere	Else Skjold, Allan Kruse, Henriette Melchiorsen, Tobias Tøstesen, Martin Keller	
Indhold	Kurset introducerer væsentlige tilgange til bæredygtighed sat i en designbåret kontekst, således at den enkelte studerende får værktøjer og indsigter der kan implementeres i deres designforslag. Kurset afvikles over 5 undervisningsdage i et samkørt KDTU-forløb henvendt til 3. semester BA studerende på henholdsvis Produkt + samt Visuel Kommunikation, og vil henvende sig direkte til de igangværende projektforløb på de respektive spor. Der vil i både oplæg og facilitering tages direkte udgangspunkt i de studerendes forløb, således at de får mappet konkrete idékataloger, samt får en overordnet forståelse af hvad bæredygtigt design indbefatter af kompleksitet, ressourcehåndtering, stakeholdersamabejde, brugerinvolvering samt balance i forhold til både natur og mennesker.	
Undervisningsform	Undervisningen vil hver gang bestå af inspirationsoplæg samt faciliterende workshops hvor de studerendes projekter inddrages aktivt.	
Krav til aflevering	Kurset bidrager med viden om bæredygtighed til de respektive projektforløb, der er dermed ikke krav om aflevering i faget. Dog vil det forventes at kursets viden og projektfacilitering bæres videre i de enkelte designforslag, ligesom det forventes at der kan argumenteres for de valg der er truffet.	

	ONS 23.10.19	Introduktion til det bæredygtige landskab Kl. 9-16 lokale 90.1.25 Kun for Produkt +. Bæredygtighed er en meget kompleks og mangefacetteret størrelse der i disse år og fremover har langtrækkende konsekvenser for hele vores samfundsopbygning, og hermed også for den rolle design spiller i interaktionen mellem mennesker, natur, produkter og systemer. I dagens oplæg v. kursusansvarlig Else Skjold vil dette landskab og nogle af de mulige konsekvenser tegnes op og formidles, således at den enkelte studerende får en større forståelse af mulighedsrummet for fremtidens design. Eftermiddagen er en workshop med udgangspunkt i de respektive kursusplaner faciliteret af Else Skjold og Allan Kruse (pt tilknyttet Johannes Torpe), uddannet modedesigner på DSKD i 1993, som har over 30 års erfaring i arbejdet med designstrategi og branding inden for mode, møbler, arkitektur m.v. Der vil her være særligt fokus på hvad der ligger under relevante verdensmål i de to undervisningsforløb, samt hvordan disse vil kunne foldes ud i bæredygtighedsperspektiver på det indledende idékatalog til de studerendes projektarbejde.
	ONS 30.10.19	Bæredygtighed og brugerinkludering Kl. 9-16 lokale 53 Auditorium 2 Der tales ofte om at bæredygtighed indbefatter at den enkelte borger føler sig inkluderet og medbestemmende. Her spiller design en helt særlig rolle, fordi design gennem både produktstrategier og strategier for services, platforme, systemer o.lign. kan påvirke adfærdsmønstre hos både 'afsendere' og 'modtagere' af design. Helt konkret handler denne undervisningsgang om måder hvorpå designere kan stimulere bedre balance mellem det, der produceres – forstået som både produkter, services, systemer og processer – og måden det anvendes på – forstået som brugeradfærd, ejerskab samt opbygning af nye fællesskaber og kredsløb af både menneskelige og fysiske ressourcer. Dagen vil hermed sætte spot på forskellige designtilgange til brugerinklusion samt hvordan de kan anvendes til at løfte de igangværende projekter. Der vil være fokus på hvordan man kan mappe brugerbehov, drømme og rutiner, og hvordan man kan anvende det i designprocessen. Herunder ligger også etik i forhold til at lave feltarbejde med personfølsomme oplysninger m.v. Undervisningformen vil være oplæg og facilitering af fælles workshop v. Else Skjold.
	ONS 06.11.19	Bæredygtighed og ressourcer

		Kl. 9-16 lokale 53 Auditorium 3 Mange verdensmål adresserer hvorledes både menneskers og naturens ressourcer udpines og udbyttes i den måde verdens økonomiske system er indrettet på i dag. Designere står i den forbindelse som både medskabere af disse problemer, men også som mulige problemløsere. Design har potentialet til at skabe helt nye formater og forståelser i den måde ressourceflows håndteres på, således at det kan bidrage positivt til at genskabe en bedre balance for mennesker og natur. Dagens oplæg vil omhandle forskellige tilgange til dette såsom principper for cirkulær økonomi, ressourceoptimering i designprocesser, samt services særligt rettet mod bæredygtige løsninger. Eftermiddagens workshop vil have det formål at mappe hvilke mulige ressourcer der er til stede i de studerendes projektforlæg, samt idégenerering på hvordan de gennem deres projekter kan stimulere en klima-positiv aktivering af disse. Dagens undervisning varetages af Henriette Melchiorsen som har mange års erfaring med at undervise både studerende og virksomheder inden for bæredygtighed.
	ONS 13.11.19	Bæredygtighed og samarbejder Kl. 9-16 lokale 53 Auditorium 3 Bæredygtighed inkluderer typisk komplekse og mangefacetterede udfordringer – i sandhed et 'super-wicked problem'!! Ud over dette er en bæredygtig designløsning noget som er svært at skabe alene. Det kræver samarbejder på tværs med de forskellige instanser og aktører som levererer, bruger eller sætter ramme for et designforslag. Dagen vil derfor have fokus på at mappe og identificere relevante aktører der påvirker de studerendes projektarbejde, samt hvordan man gennem forskellige tilgange kan skabe medejerskab eller forstå hvordan samarbejder kan fungere på tværs af værdikæder, organisations- eller virksomheds-strukturer o.lign. Dagens oplæg vil holdes af Else Skjold, mens dagen fra kl. 10.30 og frem faciliteres af Tobias Tøstesen, der har stor erfaring fra sit arbejde på Bærdygtigt Laboratorie på Designskolen Kolding
	ONS 20.11.19	Sundhed og Trivsel Kl. 9-16 lokale 53 Auditorium 3 Dagens workshop vil tage udgangspunkt i at kvalificere projektoplæg fra de studerende i forhold til særligt SDG #3: SUNDHED OG TRIVSEL, hvilket både kan appliceres på projekter på Visuelt Design samt Produkt +. For hvordan kan design medvirke til at skabe sundhed og trivsel både på det nære, personlige plan, men også i et samfundsperspektiv?

		Martin Keller som i mange år har arbejdet med verdensmål, børn og bæredygtige byer vil fortælle om sit eget arbejde, samt skabe forum for diskussion af de designforslag der er skabt af de studerende.

PENSUMLISTE 200 sider, bundet

Sider	Titel	Forfatter
xxx	Designetik og Bæredygtighed pensum: Der lægges løbende relevante tekster op i modulrummene som kan anvendes til at fordybe sig	

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[23.11.2018]

Journalnr.: Enhed: [institut] Init: [nkb]

Visuelt Design/ VK	**Programspecifik teori**	**BA**
Semesterplan:	**4. semester, blok 2**	
Modultype	**Programundervisning**	**5 ECTS**
Periode	18. marts 2019 – 28. juni 2019	
Programansvar	Tine Kjølsen	
Modulansvar	Tine Kjølsen	
Undervisere	Thomas Binder, Jesper Juul, Milan Jacevic m. fl	
Indhold	Studerende introduceres til grundlæggende teori inden for programmet og deres studieretning knyttet til de programmoduler der planlægges på semesteret. *Særligt indhold studieretning Visuel Kommunikation:* dette teorikursus giver den studerende et nuanceret overblik over forskellige designmetoder, designroller og designanskuelser tæt knyttet til blokkens projektmodul og er integreret med dette. Den skriftlige opgave og projektrapport integreres på baggrund af dette og indspillene omkring designroller og designmetoder forventes brugt til at støtte refleksionen over eget arbejde i projektet Den fælles overskrift er 'design-by-method' som er inspireret af Ezio Manzinis idé om at designengagementer i stadig højere grad bliver drevet af åbne metoder og mindre af forstillinger om bestemte genrer og løsninger. Der arbejdes med *design as research, design as experiments* og *design as proposals*. *Særligt indhold studieretning Spil- og Interaktionsdesign*: på dette teorikursus skal den studerende lære en række teorier om computerspil, herunder spil som regelstyrede oplevelser, spil som fiktioner, spil som taktile oplevelser, samt sociologiske teorier om computerspil.	
Undervisningsform	Modulet tilrettelægges på en sådan måde, at det i den indledende del har fokus på almen teoridannelse knyttet til visuel design, metoder og designanskuelser. I anden fase af modulet er forelæsninger såvel som vejledning tæt knyttet til projekt og rapport og i høj grad integreret med det parallelle projektmodul. Modulet består af en del fælles forelæsninger og 2 dele studieretningsspecifikke forløb.	
Samarbejdspartnere		

Krav til aflevering	Skriftlig opgave 7 sider integreret med projekttrapporten på projektmodulet, i alt 13-15 sider af 2200 anslag (+/- 10%)
intern censur	Christina Reedtz Funder

Tidsplan for undervisningsaktiviteter

12	MAN 18.03.19	*Introduktion til Projekt og semester*
	TIR 19.03.19	Kl. 10-12.00 introduktion til teorimodul /lokale 90.2.01 /Programteori # 1 Milan Jacevic 12.30–15.30: lokale 90.2.01: Oplæg om researchmetoder / Thomas Binder
	ONS 20.03.19	
	TOR 21.03.19	*Feltarbejde Tønder med KMR og TKJ, action through doing*
	FRE 22.03.19	*Feltarbejde Tønder med KMR og TKJ, action through doing*
13	MAN 25.03.19	
	TIR 26.03.19	
	ONS 27.03.19	
	TOR 28.03.19	Kl. 10-12.00 /lokale 90.2.01 /Programteori # 2 Milan Jacevic
	FRE 29.03.19	
14	MAN 01.04.19	
	TIR 02.04.19	Kl. 10-12.00 /lokale 90.2.01 /Programteori # 3 Milan Jacevic 13.00–16.00: /lokale 90.2.01 /STUDIERETNINGS TEORI med Thomas Binder med projekt og programvejledning Thomas Binder
	ONS 03.04.18	
	TOR 04.04.19	
	FRE 05.04.19	
15	MAN 08.04.19	9.00-12.00 /lokale 90.2.01 /STUDIERETNINGS TEORI Thomas Binder
	TIR 09.04.19	
	ONS 10.04.19	
	TOR 11.04.19	
	FRE 12.04.19	
16	MAN 15.04.19	
	TIR 16.04.19	
	ONS 17.04.19	
	TOR 18.04.19	Skærtorsdag
	FRE 19.04.19	Langfredag
17	MAN 22.04.19	2. påskedag

	TIR 23.04.19	9.00-12.00 /lokale 90.2.01 /STUDIERETNINGS TEORI / Thomas Binder samt vejledning i forhold til den skriftlige opgave/ aflevering af første draft på skriftlig opgave
	ONS 24.04.19	
	TOR 25.04.19	
	FRE 26.04.19	
18	MAN 29.04.19	
	TIR 30.05.19	
	ONS 01.05.19	9.00-12.00 /lokale 90.2.01 /STUDIERETNINGS TEORI Thomas Binder
	TOR 02.05.19	
	FRE 03.05.19	
19	MAN 06.05.19	
	TIR 07.05.19	
	ONS 08.05.19	
	TOR 09.05.19	9.00-12.00 / skolerådssalen /STUDIERETNINGS TEORI Thomas Binder og selvstændigt arbejde med skriftlig opgave
	FRE 10.05.19	
20	MAN 13.05.19	
	TIR 14.05.19	
	ONS 15.05.19	
	TOR 16.05.19	
	FRE 17.05.19	Bededag
21	MAN 20.05.19	Selvstændigt arbejde med projekt og vejledning skriftlig opgave Thomas Binder kl.13.-16.00
	TIR 21.05.19	9.00-12.00 / 90.2.20/ STUDIERETNINGS TEORI Thomas Binder
	ONS 22.05.19	
	TOR 23.05.19	
	FRE 24.05.19	
22	MAN 27.05.19	09.00–16.00: Selvstændigt arbejde med projekt og vejledning skriftlig opgave Thomas Binder kl. 13.00 -16.00
	TIR 28.05.19	Aflevering af skriftelige opgaver mellem kl. 10 og 12 i Studenterservice
	ONS 29.05.19	
	TOR 30.05.19	Kristi Himmelfart
	FRE 31.05.19	
23	MAN 03.06.19	
	TIR 04.06.19	
	ONS 05.06.19	
	TOR 06.06.19	

	FRE 07.06.19	
24	MAN 10.06.19	Pinse
	TIR 11.06.19	10.00–16.00: Eksamen – eksaminator, lokale jvf programplanen, Tine Kjølsen og Thomas Binder, censor Anders Thulin DR
	ONS 12.06.19	10.00–16.00: Eksamen – eksaminator, lokale jvf programplanen, Nikolaj Knop og Thomas Binder, censor Anders Thulin DR
	TOR 13.06.19	10.00–16.00: Eksamen – eksaminator, lokale jvf programplanen, Tine Kjølsen og Thomas Binder, censor Anders Thulin DR
	FRE 14.06.19	
25	MAN 17.06.19	
	TIR 18.06.19	
	ONS 19.06.19	
	TOR 20.06.19	
	FRE 21.06.19	
26	MAN 24.06.19	
	TIR 25.06.19	
	ONS 26.06.19	
	TOR 27.06.19	
	FRE 28.06.19	

PENSUMLISTE		150 sider, bundet
Sider	**Titel**	**Forfatter**
300+	Kompendie:Rummet som Kontekst og medie	Red: Tine Kjølsen og Elias Stenalt Werner
150+	Designmethods, Designroller & Design attitudes	Thomas Binder m fl
	Fælles programteori Juul, Jesper. 2007. "Swap Adjacent Gems to Make Sets of Three: A History of Matching Tile Games." Artifact 1 (4): 205–16. Lester, Paul Martin. 2013. *Visual Communication: Images with Messages*. 6 edition. Boston: Wadsworth Publishing. Chapter 2. Nielsen, Jakob. 1994. "Usability Inspection Methods." In *Conference Companion on Human Factors in Computing Systems*, 413–414. CHI '94. New York, NY, USA: ACM. https://doi.org/10.1145/259963.260531. Norman, Donald A. 2002. *The Design of Everyday Things*. New York, NY: Basic Books. Chapter 1.	

	Norman, Donald A. 2005. *Emotional Design: Why We Love (or Hate) Everyday Things*. New York, NY: Basic Books. Chapter 2.	

(du kan lave flere felter efter behov)

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Værkreferencer

Årstal	Titel + evt. link til foto	Designer/ Kunstner

(du kan lave flere felter efter behov)

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TKJ/[juli 2019]

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VISUELT DESIGN	**Visuel Kommunikation/ Spil- og interaktionsdesign**	**BA**
Semesterplan:	**3. semester, blok 2**	
Modultype	**Programspecifikt modul Designetik / Bæredygtig**	**20 ECTS**
Periode	21. oktober 2019 – 24. januar 2020	
Programansvar	Tine Kjølsen	
Modulansvar	Tine Kjølsen / Jeppe Kiilberg Møller	
Undervisere	Tine Kjølsen, Alessandro Canossa, Jeppe Kilberg Møller, Elias Stenalt Werner, Octavio Pardo, Peter Donner, Jens Dan Johansen, m fl	
Indhold	Semesterets projekt *design for people, design with a purpose* drejer sig overordnet om at designe til andre, i samarbejde med andre og for andre med designetik og bæredygtighed som rammen for de løsninger der fremkommer. Projektet er et samarbejdsprojekt mellem BA Visuelt Design og Rigshospitalets afdeling for onkologi, hvor børn som pårørende/brugere på hospitalet er et aktuelt forskningsfelt. Dette sker på baggrund af et udtalt behov for at hospitalet retter opmærksomheden mod hele familien, som bliver ramt og har lange ophold på hospitalet sammen med deres syge forældre. Projektets fokus er at få denne udsatte gruppe set og hørt og at udvikle visuel kommunikation og narrative forløb til forskellige digitale platforme samt spil og applikationer til dem. Projektet adresserer FN udviklingsmål # 3, SUNDHED OG TRIVSEL. Som en del af det fælles program lærer de studerende om ledelse af agile og iterativ design proces, og projektermetoder til at designe til andre. Der undervises også i UI/UX rettet mod programmets særlige genstandsfelter. Igennem modulets første uger vil der være fælles workshopaktiviteter på tværs samt en fælles forelæsningsrække der adresserer designetik og bæredygtighed og det at agere som designer i en designetisk og bæredygtig tænkning.	

	Specifikt studieretning for Visuel Kommunikation: i modulet er der desuden indlejret et færdighedskursus, der er fokuseret på at give den studerende en grundig forståelse for de forhold der skal tages stilling til i forbindelse med formgivning og produktion af en skrifttype, samt kodning og prototyping af apps. Dette færdigheds kursus indgå som en del af løsningen af projektet. Specifikt for studieretning Spil- og Interaktionsdesign: Dette modul fokuserer på at udvikle spil til et kontekst. Der arbejdes fokuseret med bruger-orienteret spiludvikling, og med spiludviklingsproces fra idé til færdigt spil. Efter undersøgelser af brugernes ønsker og behov, udvikler de studerende en serie mere og mere færdige spilprototyper, der løbende spiltestes med målgruppen. Det endelige spil skal være fuldt spilbart, og kunne spilles af brugere uden yderligere instruktion. De studerende arbejder yderligere med færdigheder indenfor 2d- og 3d grafik i kortere workshop formater.
Undervisningsform	Undervisningen former sig for største delen som projektundervisning med vejledning. Modulet indeholder projektintroduktion, opfølgning og feltarbejde i samarbejde med RH, forelæsninger, kursusmoduler, samt mellemgennemgang og projektpræsentation.
Samarbejdspartnere	Onkologisk Klinik, Center for kræft og organ sygdomme, Rigshospitalet samt KADK:LAB.
Krav til aflevering	Projektrapport på 5 sider inkl. projektprogram. Løbende aflevering af delopgaver beskrevet i semesterplan. Til eksamen medbringes designarbejde fra alle delopgaver i form af prototyper, visualiseringer, procesmateriale og fuldt udfoldet designprojekt. Du skal løse den på studieturen stillede opgave, eller den tilsvarende opgave for de studerende som ikke deltager i studieturen. Din besvarelse vil blive vurderet umiddelbart efter aflevering og materialet skal ikke medbringes til den endelige eksamen. Udvalgt arbejde fra semesteret skal tilføjes et digitalt portfolio, fx Behance.
Intern censur	Martin Sønderlev Christensen

43	MAN 21.10.19	STUDIETUR
	TIR 22.10.19	STUDIETUR
	ONS 23.10.19	STUDIETUR

	TOR 24.10.19	STUDIETUR
	FRE 25.10.19	STUDIETUR
44	MAN 28.10.19	Kl. 9.00–13.00 / Rigshospitalet opgang 5, 7 sal, det store konferencerum lok.5073/ Brief/ Tine Kjølsen, Jeppe Kiilberg og Rigshospitalet ved Helle Pappot, Professor og overlæge, Helle Gyldenvang, Klinisk sygeplejespecialist og Karin Piil, Seniorforsker og lektor, Onkologisk Klinik, Center for kræft og organ sygdomme, Rigshospitalet. Kl 14.30 – 15.30 opsamling på projekt, etablering af studiepladser og design brief, øverste dæk bygning 90
	TIR 29.10.19	9.00-12.00 selvstændigt arbejde med emneafklaring i forhold til designbrief ved studiepladserne 12.00–15.30: aud 15/ Introduktion til semesterprogram og læringsmål Tine Kjølsen og Jeppe Kiilberg/ Oplæg om generative researchmetoder Alessandro Canossa samt introduktion til programskrivning / Tine Kjølsen
	ONS 30.10.19	Kl.9.00-16.00 Designetik og bæredygtighed / Brugerinkludering og bæredygtighed/forelæsning og workshop 16:00-20:00 studieretning SI: Game Jam på tværs af årgangene
	TOR 31.10.19	9:00-16:00 studieretning SI: Game Jam på tværs af årgangene 09.00–15.00 / **90.2.20/90.2.01**: Type design: Introduction. Type as system. Type Cooker. / Elias Stenalt Werner & Octavio Pardo/ studieretning VK
	FRE 01.11.19	9:00-16:00 studieretning SI: Game Jam på tværs af årgangene Studieretning viskom? 9:00-16:00 studieretning VK: Type Design GLYPHS selvstændigt arbejde / studieretning VK
45	MAN 04.11.19	9.00-12.00 gruppedannelser omkring emner til RH samarbejdet og programskitsering/ studiepladserne/ Tine Kjølsen, Jeppe Kiilberg Møller. Kl 13.00 LARP forelæsning om live action roleplay/ participatory / design Alessandro Canossa/lokale 90.1.25
	TIR 05.11.19	09.00-15.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller og Tine Kjølsen
	ONS 06.11.19	Kl.9.00-16.00 Designetik og bæredygtighed / Bæredygtighed og ressourcer/forelæsning og workshop
	TOR 07.11.19	09.00–12.00: **90.2.20/90.2.01**: Type design: Type and character / Elias Stenalt Werner / studieretning VK 13.30-16.30 studieretning SI: UNITY support Benno
	FRE 08.11.19	09.00-15.00 selvstændigt arbejde med projekt og program
46	MAN 11.11.19	9.00-13.00 Projektvejledning af grupper omkring emne og programafklaring /Jens Dan Johansen og Tine Kjølsen / Jeppe Kiilberg og Alessandro Canossa på studiepladserne / kl.13.00-14.30 forelæsning om wayfinding og orienteringssystemer i hospitalet med Peter Donner fra TRIAGONAL i lokale 90.1.25

	TIR 12.11.19	09.00-15.00 vejledning Tine Kjølsen 09.00-16.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller
	ONS 13.11.19	Kl.9.00-16.00 Designetik og bæredygtighed /Bæredygtighed og samarbejder/ forelæsning og workshop
	TOR 14.11.19	09.00–12.00: **90.2.20/90.2.01**: Type design: Readability / Sofie Beier/ studieretning VK 9.00-12.00 studieretning SI: vejledning Alessandro Canossa 13.30-16.30 studieretning SI: UNITY support Benno Lüders
	FRE 15.11.19	09.00-15.00 selvstændigt arbejde med projekt og program
47	MAN 18.11.19	09.00-15.00 vejledning Tine Kjølsen og Jens Dan Johansen
	TIR 19.11.19	Kl.9.00 deadline for aflevering af programudkast digitalt til tkj@kadk.dk 09.00-16.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller
	ONS 20.11.19	Kl.9.00-16.00 Designetik og bæreygtighed / Sundhed og trivsel/ forelæsning og workshop
	TOR 21.11.19	09.00–12.00: **90.2.20/90.2.01**: Type design: Numbers / Elias Stenalt Werner / studieretning VK 9.00-12.00 studieretning SI: vejledning Alessandro Canossa 13.30-16.30 studieretning SI: UNITY support Benno Lüders
	FRE 22.11.19	Selvstændigt arbejde
48	MAN 25.11.19	Vejledning Jens Dan Johansen
	TIR 26.11.19	09.00-15.00 vejledning Tine Kjølsen 09.00-16.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller
	ONS 27.11.19	09.00–12.00: **90.2.20/90.2.01**: Type design: Behaviour and features / Octavio Pardo/ studieretning VK
	TOR 28.11.19	9.00-12.00 studieretning SI: vejledning Alessandro Canossa 13.30-16.30 studieretning SI: UNITY support Benno Lüders
	FRE 29.11.19	Selvstændigt arbejde
49	MAN 02.12.19	Vejledning Jens Dan Johansen
	TIR 03.12.19	09.00-15.00 vejledning Tine Kjølsen 09.00-16.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller
	ONS 04.12.19	09.00–12.00: / lokale 90.2.01 eller 90.2.20 / Type design: Family Planning / Elias Stenalt Werner and Octavio Pardo/ studieretning VK
	TOR 05.12.19	9.00-12.00 studieretning SI: vejledning Alessandro Canossa 13.30-16.30 studieretning SI: UNITY support Benno Lüders
	FRE 06.12.19	Selvstændigt arbejde
50	MAN 09.12.19	13.00 – 16.00 Midvejsgennemgang af projektet med Rigshospitalet i grupper / aud 15/ med Karin Piil og Helle Gyldenvang fra Rigshospitalet
	TIR 10.12.19	09.00-15.00 vejledning Tine Kjølsen 09.00-16.00 UX/usability/ playtesting/ vejledning – Jeppe Kiilberg Møller

	ONS 11.12.19	09.00–12.00 / aud 15 / Type design: Final review / Elias Stenalt Werner and Octavio Pardo/ studieretning VK
	TOR 12.12.19	Vejledning Jens Dan Johansen 9.00-12.00 studieretning SI: vejledning Alessandro Canossa 13.30-16.30 studieretning SI: UNITY support Benno Lüders
	FRE 13.12.19	Selvstændigt arbejde
51	MAN 16.12.19	Selvstændigt arbejde
	TIR 17.12.19	9.00-12.00 final call – vejledning – Jeppe Kiilberg Møller
	ONS 18.12.19	Selvstændigt arbejde
	TOR 19.12.19	Julefrokost
	FRE 20.12.19	**JULEFERIE / SELVSTUDIE**
1	TIR 31.12.19	**JULEFERIE / SELVSTUDIE**
	ONS 01.01.20	**JULEFERIE / SELVSTUDIE**
	TOR 02.01.20	Selvstændigt arbejde
	FRE 03.01.20	Selvstændigt arbejde
2	MAN 06.01.20	09.00-15.00 vejledning Jeppe Kiilberg Møller
	TIR 07.01.20	09.00-15.00 vejledning Tine Kjølsen og Jens Dan Johansen/ digital evaluering information
	ONS 08.01.20	9:00-12:00 studieretning VK: GLYPHS / Elias Stenalt Werner / studieretning VK / foyeen bygning 90
	TOR 09.01.20	13.30-16.30 studieretning SI: UNITY support Benno
	FRE 10.01.20	Aflevering af projektrapport mellem kl. 10 – 12 i Studenterservice Kl.12.30-15.00 præsentation, formidling, pitch, eksamens vejledning Tine Kjølsen m fl. i studiesalen/ samt evalueringsopfølgning
3	MAN 13.01.20	Selvstændigt arbejde
	TIR 14.01.20	13.00-16.00 Endelig præsentation af designforslag til Rigshospitalet / skolerådssalen/ med Karin Piil og Helle Gyldenvang fra Rigshospitalet
	ONS 15.01.20	09.00-16.00 forberede eksamen
	TOR 16.01.20	EKSAMEN / eksaminator Tine Kjølsen og Jeppe Kilberg/ intern censor Martin Sønderlev ?INDKALDT OUTLOOK
	FRE 17.01.20	EKSAMEN / eksaminator Tine Kjølsen og Jeppe Kilberg intern censor Martin Sønderlev ? INDKALDT OUTLOOK
4	MAN 20.01.20	*Oprydning studiepladser*
	TIR 21.01.20	*Oprydning studiepladser*
	ONS 22.01.20	*Oprydning studiepladser*
	TOR 23.01.20	*Oprydning studiepladser*
	FRE 24.01.20	*Oprydning studiepladser*

PENSUMLISTE 200 sider, bundet

Sider	Titel	Forfatter
xxx	Studieretning visuel kommunikation pensum:	
xxx	Studieretning spil- og interaktion pensum: ● Gee, James Paul. *Good Video Games + Good Learning: Collected Essays on Video Games, Learning and Literacy*. Peter Lang Pub Inc, 2007. (Uddrag.) ● Pagulayan, Randy J., Kevin Keeker, Dennis Wixon, Ramon L. Romero, and Thomas Fuller. "User-Centered Design in Games." In *The Human-Computer Interaction Handbook*, edited by Julie A. Jacko and Andrew Sears, 883–906. Hillsdale, NJ, USA: L. Erlbaum Associates Inc., 2003. http://www.studiosuserresearch.com/HCI_Handbook_Chapter.pdf. ● Culyba, Sabrina Haskell. The Transformational Framework, 2018. http://press.etc.cmu.edu/index.php/product/the-transformational-framework/. ● Fullerton, Tracy. *Game Design Workshop: A Playcentric Approach to Creating Innovative Games, Third Edition*. 3 edition. Boca Raton: A K Peters/CRC Press, 2014. *Chapter 3 on playtesting*.	

(du kan lave flere felter efter behov)

PDF fil af opgivet tekster uploades i mappe i modulrum

Værkreferencer		
Årstal	**Titel + evt. link til foto**	**Designer/ Kunstner**

(du kan lave flere felter efter behov)

Det Kongelige Danske Kunstakademis Skoler
for Arkitektur, Design og Konservering
Designskolen

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info@kadk.dk

[23.11.2018]

Journalnr.: Enhed: [institut] Init: [nkb]

Visuelt Design/VK	**Stedet som kontekst og medie**	**BA**
Semesterplan:	**4. semester, blok 2**	
Modultype	**Programundervisning**	**15 ECTS**
Periode	18. marts 2019 – 28. juni 2019	
Programansvar	Tine Kjølsen	
Modulansvar	Tine Kjølsen	
Undervisere	Tine Kjølsen, Rikke Storm, Kirsten Marie Raahauge, Thomas Binder, Nikolaj Knop, Peter Donner, Thor Hedegaard, Elizabeth Fox Jensen, Tatiana Lyng, Milan Jacevic m fl	
Indhold	**Stedet som kontekst og medie** Kernen i dette modul er et samarbejde med Tøndermarsk Initiativet (TMI) om udvikling af koncepter til wayfinding for Tønder og Tøndermarsken, med fokus på Tønder by. Fokus for TMI er at løfte Tøndermarsken som område og turistdestination. Arbejdet med koncepterne vil således forholde sig til den overordnede strategi for wayfindingen og dennes rolle i fortællingen om – og udviklingen af –Tøndermarsken, og vil i deres forslagsstillelse stille skarpt på hvordan wayfinding i Tønder by, og muligvis den omgivende marsk, kan udformes. Fokus for opgaven vil være på hvordan wayfinding, gennem det den peger på – og med hvilke virkemidler den gør det – kan bidrage til at højne oplevelsen af Tønder og Tøndermarsken som destination. Der udformes et præcist brief til projektet. Fælles for programmet visuelt design gennemføres på tværs af 2. og 4 semester et projectjam med appdesign og UI/ UX tilknyttet samt kursus i Cinema4D. Det er hensigten med det parallele teoriforløb at den skriftlige opgave og projektrapport bliver integreret og at oplæggene omkring designroller og designmetoder bliver brugt til at støtte refleksionen over eget arbejde i projektet.	
Undervisningsform	Undervisningen former sig for størstedelen som projektundervisning med vejledning. Modulet indeholder herudover feltarbejde i Tønder, kursus i Cinema4D, project jam og appdesign, undervisning i rumlig	

	skitsering, forelæsninger og virksomhedsbesøg. Modulet består desuden af vejledning i grupper og individuelt, samt en mellemgennemgang med projektrammeholder (TMI).
Samarbejdspartnere	Tøndermarsk Initiativet, Lysipleks og TEC
Krav til aflevering	Projektrapport på 5 sider samt program, og til eksamen fuldt udfoldet designprojekt. Projektrapporten integreres med den skriftlige teoriopgave (på 7 sider) dvs samlet 13 sider og indspillene omkring designroller og designmetoder bruges til at støtte de studerendes refleksion over eget arbejde i projektet.
Ekstern censur	Anders Thulin DR

Tidsplan for undervisningsaktiviteter

12	MAN 18.03.19	Kl. 9.30–12.00 / lokale 90.2.01: Brief/ Tine Kjølsen, Thomas Binder, Rikke Storm, Peter Donner og repræsentant fra TMI Destination development manager Julie Rechnagel Bjerre Hermansen 13.00–14.30: Wayfindingoplæg / Rikke Storm
	TIR 19.03.19	10.00-12.00 *Programteori Milan Jacevic #1* 12.30–15.30: 90.2.20: Oplæg om researchmetoder / lokale 90.2.01/ Thomas Binder
	ONS 20.03.19	13.00–16.00: Tegneundervisning registrering / Rikke Storm
	TOR 21.03.19	*TØNDERMARSKEN,* Registreringstur til Tøndermarsken, møde med TMI/ Tine Kjølsen og Kirsten Marie Raahauge
	FRE 22.03.19	*TØNDERMARSKEN,* Registreringstur til Tøndermarsken, møde med TMI/ Tine Kjølsen og Kirsten Marie Raahauge
13	MAN 25.03.19	9.00-16.00 Project JAM – app UI/ UX forløb sammen med 2 sem / lokale / Tatiana Lyng
	TIR 26.03.19	9.00-16.00 Project JAM – app UI/ UX forløb sammen med 4 sem / *lokale?* / Tatiana Lyng
	ONS 27.03.19	09.00–16.00: Project JAM – app UI/ UX forløb sammen med 2 sem /lokale / Tatiana Lyng
	TOR 28.03.19	10.00-12.00 *PROGRAMTEORI Milan Jacevic #2* Kl 12.30-16.30 Project JAM – app UI/ UX forløb sammen med 2 sem / lokale/ Tatiana Lyng
	FRE 29.03.19	09.00–12.00: Programskrivning og vejledning, Thomas Binder Kl 12.30-16.30 Project JAM – app UI/ UX forløb sammen med 4 sem/ lokale / Tatiana Lyng
14	MAN 01.04.19	9.00-12.00: lokale 90.1.20/Oplæg og vejledning ved tegnebordene / Kirsten Marie Raahauge 13.00–16.00: Tegneundervisning rumlig skitsering / Rikke Storm
	TIR 02.04.19	10.00-12.00 *PROGRAMTEORI Milan Jacevic #3*

			kl.13-16.00 PROGRAMTEORI med Thomas Binder med projekt og programvejledning
	ONS	03.04.18	09.00–15.00: Vejledning ved tegnebordene / Peter Donner
	TOR	04.04.19	9.00-16.00 selvstændigt arbejde med projekt
	FRE	05.04.19	Aflevering af program senest kl 09.05 til tkj@kadk.dk 09.00–16.00: Selvstændigt arbejde med projekt
15	MAN	08.04.19	9.00-12.00 *PROGRAMTEORI Thomas Binder* 13.15.30 lokale 90.2.01/ Cinema4D / Thor Hedegaard
	TIR	09.04.19	13.00–16.00:90.2.01: lokale 90.2.01/ Cinema4D / Thor Hedegaard
	ONS	10.04.19	09.00–14.00: 90.2.01: lokale 90.2.01/ Cinema4D / Thor Hedegaard 14.00 –15.30: Vejledning ved tegnebordene / Tine Kjølsen
	TOR	11.04.19	10.00–16.00:90.2.01: lokale 90.2.01/ Cinema4D / Thor Hedegaard
	FRE	12.04.19	10.00–16.00:90.2.01: lokale 90.2.01/ Cinema4D / Thor Hedegaard
16	MAN	15.04.19	9.00-15.00 Selvstændigt arbejde med projekt / vejledning med Peter Donner
	TIR	16.04.19	Selvstændigt arbejde med projekt
	ONS	17.04.19	Selvstændigt arbejde med projekt
	TOR	18.04.19	Skærtorsdag PÅSKEFERIE
	FRE	19.04.19	Langfredag PÅSKEFERIE
17	MAN	22.04.19	2. påskedag PÅSKEFERIE
	TIR	23.04.19	09.00–16.00: Selvstændigt arbejde med projekt. 9.00-12.00 PROGRAMTEORI / Thomas Binder samt vejledning i forhold til den skriftlige opgave/ aflevering af første draft på skriftlig opgave
	ONS	24.04.19	09.00–12.00: Tegneundervisning rumlig skitsering / Rikke Storm
	TOR	25.04.19	09.00–15.00: Vejledning ved tegnebordene / Peter Donner
	FRE	26.04.19	09.00–16.00: Selvstændigt arbejde med projekt
18	MAN	29.04.19	09.00–16.00: Selvstændigt arbejde med projekt
	TIR	30.04.19	09.00–16.00: 90.2.20: lokale 90.1.20/ Mellemgennemgang / Nikolaj Knop, Tine Kjølsen, Thomas Binder, Repræsentant fra TMI
	ONS	01.05.19	09.00–16.00: Selvstændigt arbejde med projekt
	TOR	02.05.19	09.00–15.00: Vejledning ved tegnebordene / Nikolaj Knop, Tine Kjølsen, Peter Donner
	FRE	03.05.19	10.00–12.00: Virksomhedsbesøg, Lysiplex / Nikolaj Knop 13.00–16.00: *PROGRAMTEORI Thomas Binder*
19	MAN	06.05.19	9.00–16.00: Selvstændigt arbejde med projekt
	TIR	07.05.19	09.00–12.00: Tegneundervisning rumlig skitsering / Rikke Storm 12.00–16.00: Selvstændigt arbejde med projekt
	ONS	08.05.19	09.00–15.00: Vejledning ved tegnebordene / Peter Donner

	TOR	09.05.19	9.00-12.00 *PROGRAMTEORI Thomas Binder* *Selvstændigt arbejde med skriftlig opgave*
	FRE	10.05.19	*Selvstændigt arbejde med skriftlig opgave*
20	MAN	13.05.19	09.00–16.00: TEC – skiltebesøg Søborg / Tine Kjølsen
	TIR	14.05.19	09.00–12.00: vejledning ved tegnebordene / Tine Kjølsen 13.00–15.30: Tegneundervisning rumlig skitsering / Rikke Storm
	ONS	15.05.19	09.00–16.00: Selvstændigt arbejde med projekt
	TOR	16.05.19	09.00–16.00: Selvstændigt arbejde med projekt
	FRE	17.05.19	Bededag
21	MAN	20.05.19	09.00–16.00: Selvstændigt arbejde med projekt og vejledning skriftlig opgave Thomas Binder kl.13.-16.00
	TIR	21.05.19	09.00–16.00: Selvstændigt arbejde med projekt 9.00-12.00 *PROGRAMTEORI Thomas Binder*
	ONS	22.05.19	09.00–15.00: Vejledning ved tegnebordene / Tine Kjølsen, Peter Donner
	TOR	23.05.19	09.00–16.00: Selvstændigt arbejde med projekt
	FRE	24.05.19	09.00–16.00: Selvstændigt arbejde med projekt
22	MAN	27.05.19	09.00–16.00: Selvstændigt arbejde med projekt og vejledning skriftlig opgave Thomas Binder kl. 13.00 -16.00
	TIR	28.05.19	Aflevering af skriftelige opgaver mellem kl. 10 og 12 i Studenterservice
	ONS	29.05.19	09.00–15.00: Vejledning ved tegnebordene, Evaluering / Nikolaj Knop, Tine Kjølsen
	TOR	30.05.19	Kristi Himmelfart
	FRE	31.05.19	09.00–16.00: Selvstændigt arbejde med projekt
23	MAN	03.06.19	09.00–16.00: Selvstændigt arbejde med projekt
	TIR	04.06.19	09.00–15.00: Vejledning ved tegnebordene, **Evaluering** / Tine Kjølsen
	ONS	05.06.19	09.00–16.00: Selvstændigt arbejde med projekt, forberedelse til eksamen og udstillingselement til TMI
	TOR	06.06.19	09.00–16.00: Selvstændigt arbejde med projekt forberedelse til eksamen og udstillingselement til TMI/ kl. 13.00-15.00 Behance upload til digital portfolio med Elizabeth Fox Jensen
	FRE	07.06.19	09.00–15.00: Selvstændigt arbejde med projekt, forberedelse til eksamen og udstillingselement til TMI
24	MAN	10.06.19	Pinse
	TIR	11.06.19	10.00–16.00: Eksamen - eksaminator Tine Kjølsen og Thomas Binder, censor Anders Thulin DR / skolerådssalen
	ONS	12.06.19	10.00–16.00: Eksamen - eksaminator Nikolaj Knop og Thomas Binder, censor Anders Thulin DR/ skolerådssalen
	TOR	13.06.19	10.00–12.00: Eksamen - eksaminator Tine Kjølsen og Thomas Binder, censor Anders Thulin DR/ skolerådssalen
	FRE	14.06.19	*Oprydning af studiepladser*
25	MAN	17.06.19	*Oprydning af studiepladser*

	TIR 18.06.19	*Oprydning af studiepladser*
	ONS 19.06.19	*Oprydning af studiepladser*
	TOR 20.06.19	*Oprydning af studiepladser*
	FRE 21.06.19	*Oprydning af studiepladser*
26	MAN 24.06.19	
	TIR 25.06.19	
	ONS 26.06.19	
	TOR 27.06.19	
	FRE 28.06.19	

PENSUMLISTE 150 sider, bundet

Sider	Titel	Forfatter
150	Kompendie: Rummet som kontrekst og medie mm	Red: Elias Stenalt Werner og Tine Kjølsen

(du kan lave flere felter efter behov)

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Værkreferencer

Årstal	Titel + evt. link til foto	Designer/ Kunstner

(du kan lave flere felter efter behov)

Det Kongelige Danske Kunstakademis Skoler
for Arkitektur, Design og Konservering
Designskolen

Philip de Langes Allé 10
1435 København K
Danmark

Tlf. 4170 1500
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info@kadk.dk

[TKJ/ juli 2019]

Journalnr.: Enhed: IVD Init: []

VISUELT DESIGN	**Visuelt Design / Visuel Kommunikation**	**BA**
Semesterplan:	**5. semester, blok 2**	
Modultype	**Bachelorprojekt**	**20 ECTS**
Periode	21. oktober 2019 – 24. januar 2020	
Programansvar	Tine Kjølsen	
Modulansvar	Tine Kjølsen	
Undervisere	Martin Sønderlev, Søren Wibroe, Arthur Steijn, Flemming Dupont, Tine Kjølsen, Elias Stenalt Werner, Caroline Fangel, Alsessandro Canossa og Jeppe Kiilberg Møller	
Indhold	Bachelorprojektet på Visuel Kommunikation skal dokumentere, at den studerende ved at anvende designteori, metoder og færdigheder kan løse grundlæggende designfaglige problemstillinger på et professionelt niveau. I bacheloruddannelsens eksamensprojekt kan den studerende sætte hele sin designfaglighed i spil. Viden, grundlæggende designfaglige færdigheder og kompetencer opnået gennem bacheloruddannelsen anvendes i udarbejdelsen af et selvformuleret afgrænset designfagligt projekt.	
Undervisningsform	Indledende workshop, fælles gennemgangen, midtvejsgennemgang og vejledning af de enkelte studerende i forhold til deres projekter	
Samarbejdspartnere	KADK:lab og mulige eksterne partnere afhængig af de projekter der udfoldes og printværkstedet	
Krav til aflevering	Projektrapport 10 sider, program samt fuldt udfoldet designprojekt. Man forventes at deltage fuldt ud og bruge den givne vejledningsplan i hele BA projektperioden.	
Ekstern censur	Fastlægges gennem studieadministrationen	

43	MAN 21.10.19	BA projektstart med vejledere, vejledning om program og tidsplan på studiepladserne / evt fredag i uge 42 OBS pga studieturem

	TIR 22.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 23.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	TOR 24.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE 25.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
44	MAN 28.10.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 29.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 30.10.19	Kl.9.00-13.00 selvstændigt arbejde med projekt og vejledning 13.00 – GAME JAM særligt for studieretning spil- og interaktion
	TOR 31.10.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ Kl.9.00- GAME JAM særligt for studieretning spil- og interaktion
	FRE 01.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning/ GAME JAM særligt for studieretning spil- og interaktion
45	MAN 04.11.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 05.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 06.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	TOR 07.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	FRE 08.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
46	MAN 11.11.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 12.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 13.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	TOR 14.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE 15.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
47	MAN 18.11.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 19.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 20.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	TOR 21.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE 22.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
48	MAN 25.11.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 26.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 27.11.19	Kl.9.00-16.00 Mellemgennemgang for alle
	TOR 28.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE 29.11.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
49	MAN 02.12.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR 03.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS 04.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	TOR 05.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE 06.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning

			studieretning spil- og interaktion UNITY support
50	MAN	09.12.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR	10.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS	11.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	TOR	12.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE	13.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
51	MAN	16.12.19	Kl.9.00-10.30 vejledningsmøder i grupper og individuelt
	TIR	17.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	ONS	18.12.19	Aflevering af projektrapport mellem kl. 10 og 12 i Studenterservice????
	TOR	19.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE	20.12.19	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
1	TIR	31.12.19	JUL
	ONS	01.01.20	FERIE
	TOR	02.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning TKJ
	FRE	03.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
2	MAN	06.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	TIR	07.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning studieretning spil- og interaktion UNITY support
	ONS	08.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning Kl.13.00-14.00 Behance upload til digital portfolio follow/ intro evaluering TKJ
	TOR	09.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
	FRE	10.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og vejledning
3	MAN	13.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og eksamens forberedelse/ evaluering og opfølgning / TKJ
	TIR	14.01.20	Kl.9.00-16.00 selvstændigt arbejde med projekt og eksamensforberedelse
	ONS	15.01.20	EKSAMEN???? Ekstern censur
	TOR	16.01.20	*EKSAMEN????* Ekstern censur
	FRE	17.01.20	*EKSAMNE????* Ekstern censur
4	MAN	20.01.20	
	TIR	21.01.20	
	ONS	22.01.20	
	TOR	23.01.20	
	FRE	24.01.20	

PENSUMLISTE

Sider	Titel	Forfatter
300	Frit selvvalgt pensum	

(du kan lave flere felter efter behov)

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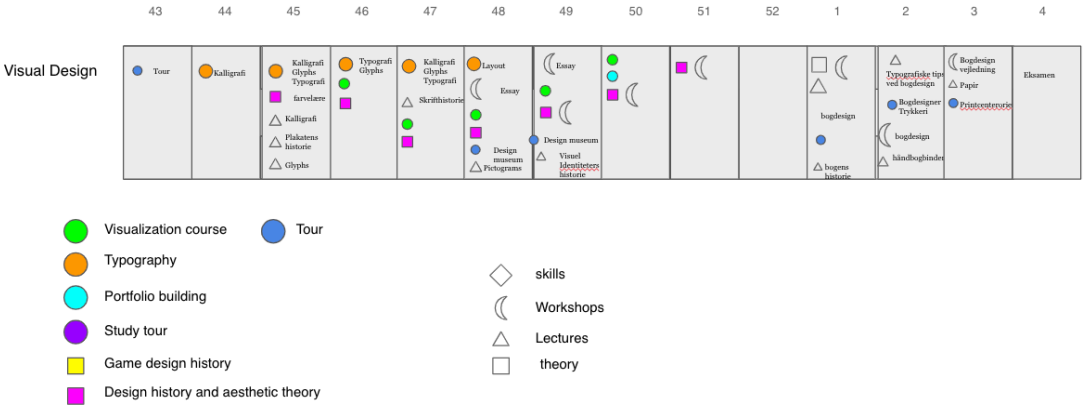
Værkreferencer

Årstal	Titel + evt. link til foto	Designer/ Kunstner

(du kan lave flere felter efter behov)

Year 1 - Semester 1- Typography and book design

knowledge+exercise+intro
basic disciplines of the fields of study: basic color theory, design principles, typography, iterative design method basic skills in 2D and 3D graphics for games, development of basic skills in interaction design.
Mini-projects: design of entries, design of small publication and design of book, reading texts, lectures on subject-specific history, research and writing of essay, and company visits.



Visualization course
Typography
Portfolio building
Study tour
Game design history
Design history and aesthetic theory
Tour
skills
Workshops
Lectures
theory

Year 1 - Semester 1- Game design

knowledge+exercise+intro
basic disciplines of the fields of study: basic color theory, design principles, typography, iterative design method basic skills in 2D and 3D graphics for games, development of basic skills in interaction design.
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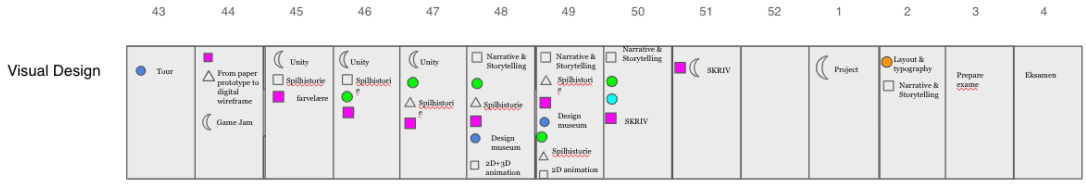
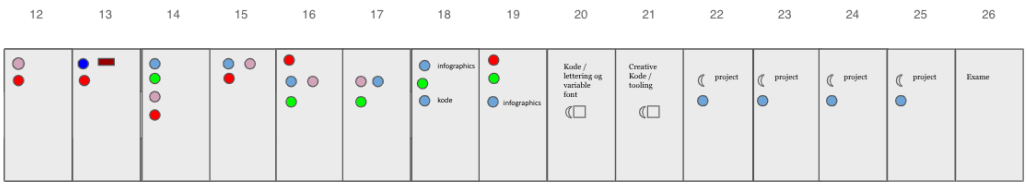


Visualization course
Typography
Portfolio building
Study tour
Game design history
Design history and aesthetic theory
Tour
skills
Workshops
Lectures
theory

Year 1 - Semester 2 - visual design

- practice and enhance the student's ability to articulate and shape observations and ideas visually.
- visual narratives: illustrations, data visualization and lettering
- Graphic design, setup, narration and programming / prototyping of digital experiences
- tools and techniques



Visualization course
Digital illustration
Portfolio building
Study tour
Game design history
Design history and aesthetic theory
Tour
interaction and UX
Project jam
Design and society
Storytelling
skills
Workshops
Lectures
theory

Interviews findings

KADK staff
Teachers in other educations
Students
Industry

Education in KADK

Expectations
Institution from students:

Ethics agenda:

- The students are expected to have a sensitive human approach – TK
- Design students always needs to challenge the agenda and have an ethic and sustainable perspective – MA
- To be reflective through the process but also to look at yourself from the outside – MSC
- To come with an agenda - TU

Forming the scope

- There are pre-defined decisions of what design is for new student – MA
- We are using the SDG's in our home assignment – MA
- The students should pick tools like software by themselves – ZH

Challenges to meet

- Students are not being pre-educated as they used to be. We need to teach them the basics. – MSC
- A lot of students are straggling with the shift in design – MSC
- You can't demand from everyone to analyze a problem like Foucault – MSC

Students from the institution:

- Students probably dream to make a great font or posters – MSC
- I don't think that many students are coming here and think they will work with data vis. – MSC
- The students expected to be ready for the job market – that created a clash – ZH
- The clashes with the students are very much a matter of expectations – ZH
- We don't get so much in dept with our own courses – GD2
- We want game related topics in our courses – GD2
- I'm missing craftsmanship and more visual work – VD2
- It's nice to have someone that can actually say something about games – GD1
- At many of the shared courses there is no reference to games at all – GD1
- We were having troubles to put the assignment into gaming perspective – GD1
- We had supervisors from furniture design and V.C. but not game designers at the sus. Course – GD2
- The students and the researchers stand together in the front – trying to break new ground – UR

Bottom up pleasure

- The students that we will practice what we preach – MA
- Sus is not something that we want, it is something that the students are asking for – CT
- How do we deal with the student's requirement? – CT

Study areas + methods

Tradition

- The education is the artistic approach and the form – MA
- The core is Form follows function, but I'd say – the most sustainable solution – MA
- Our history is our 'liaison to operate- MA
- We have a strong heritage and legacy from the school of architecture – MSC
- Designers should know the tradition they stand on – MSC
- We learned about different eras in design history- GD1

Storytelling

- On semester 4 the focus is on storytelling and narratives, among other things – TK
- We learn how a story built and how to make it interesting – VD1
- A lot of games are storytelling – GD1
- Storytelling is very easy for us to put in the context of what we are doing- GD1

Methods + skills

- The students learn how to create beautiful data sets – A
- First year is about the toolbox of design - TK
- We teach co-creation and behavioral change – UR
- We have 'skills course' for the students 'to regarse playing the instrument'
- We worked with co-creation cards – VD2
- We experienced different design methods – VD2
- We work with feature cards to start a game design – GD1

Working with a company

- We work with real world problems and try to go dipper to them – MSC
- Semester 3+4 is about working with real problems, people and context – TK
- We are now investigating a company from a business perspective – VD2
- We worked with a hospital according to the brief – VD2

Reflections

- We had to write a developer's diary about the design process – GD1

Context + system

- We are always interested in the context and some of that is the environmental context- CT
- All the courses here look at the system – UR

Re-framing materials

- There is a shift in design towards an expended notion of materials – ZH
- Can we reframe the story of the material? – UR
- The students need to create new narratives around materials – UR
- Re-defining the material is how we address / use it – UR
- We need to think the materials right from the beginning – UR
- Now days there is a higher awareness to how do we use materials – TK

Brief

- The briefs are quite open – UR
- The students have to explore something specifically rather than do something specifically – UR
- The students can frame the thing they want to address – UR

Past skills future context

- How can the past be relevant to the future in new ways? – UR
- How did we do things before we became unsustainable? Looking at the past – UR
- In my age I have some skills that the students don't have that allows me to act more sustainably – TK
- Some of the old ways of thinking about form can be beneficial for working with a problem – MSC

Program's model

- Nested model: tangible – intangible, local – global, product – system – paradigm, me – us – we - ZH
- There are 3 aspects of the studies: interactive, visual and coding - A

Others

- We try to understand other cultures through museums/ readings – UR
- We combine scientific and artistic research - ZH
- Students work both individually and in groups – TK
- The courses relates to elements that takes place inside the game's world - A
- We made staircase more attractive and a campaign – VD2

Sustainability

- The more we focus on sustainability it becomes like a default way of thinking – TD
- By continuously working on sus. It becomes like a culture – TD
- We focus on the entire SDG's – not just climate – TD
- The SDG's are part of our strategy – MA
- We have design ethics and sus. Embedded in the education -MA
- Sus. Is not on focus when we primarily use computers – TK
- We don't have time to approach sus. Directly in our study program – A
- We use 4 different approaches to sus: environmental, economic, social and cultural – UR
- We haven't figured out how to execute sus. In our learning space yet – CT

Classroom level

Teacher

- I'm authoritative because I've done a lot of design and can say what's good and bad – MSC
- How you frame it, deliver it, what your focus point is… it's on the implementation level that you make the difference – CT
- The most important and impactful thing is the teacher in class – CT
- The implementation level is what controls the learning - CT

Group work

- When you work in a group you get a lot from the process. Sometimes the project is about good dynamics and ethics – VD1
- You learn as much from your colleges as from your teachers – VD1

Dynamics

- The critical sessions are in the core of our teaching – MSC
- What are the factors in the critique sessions? – MSC
- The way to push sus. Further is to have a dialogue with the students what does it mean – TK
- We are increasingly aware of what's happening in te critique sessions – how and why are we doing this? – MSC
- We need to be much more focused in what's going on in the critique sessions. We don't have a framework for it now - MSC
- Using radical pedagogy: I'm sharing my position and the student identify herself in the design landscape accordingly - ZH

Principles

- I make sus. As complex as I can – ES
- Going back and forth between the material and reflection – MSC
- I try to make the students create less paper prototyping to prevent waste – A
- Teach methodologies for working/ not working - MSC
- We start in small scale, but they learn a mindset – ES
- You need to be aware of what you do and how you do it – MSC
- No hierarchy towards the level the students work at – all are relevant – UR
- We try not to give an answer to things – UR
- Curating principle: Simple but not simplistic - UR

Content

- Take a stand why those 2-3 disciplines needs to be talking to each other – ZH
- We try to introduce different ways of working with sus. – UR
- We rather have fewer things students are engaged with – UR
- A stand is something we all have something to say about – ZH
- It's important to introduce sus. So the students will take a stand on that - CT

Pedagogy

Multi-disciplinary

- We have scholars from different fields in our staff – ZH
- Trans-disciplinary approach rather than cross – disciplinary – ZH
- Applying a radical theoretical perspective on specific design cases – ZH
- Each course is thought by 2-3 teachers from artistic practice, theory and design – ZH
- I'd love to bring other actors to the critique sessions - MSc

Other

- We got a mandate to do a progressive education from the top – ZH
- We put the design practice in a broad context – ZH
- There is a scope for bringing the classroom outside – ZH
- We have an international and multicultural environment – ZH
- There was a lot of group dynamic to bring the old and the new stuff together – ZH
- We can't responsibly make an education which is about the 'design genius' – ES
- We need to make the students aware of possibilities and responsibilities – MA
- It's mainly about how we get other people to behave with the products that we produce – TK
- There is a strong influence of feminist sciences - ZH
- We have no hierarchy between the intellectual and the artistic – ZH
- We can compare different types of overall approaches to a problem – CT
- We need to think theory and practice as one - ZH

Agenda

Attitude

- We try to make more of a pull effect rather than pushing scare massage – TD

Critical

- We take a critical view on sus. – ZH

Pushing sus.

- We are looking for inviting the discussion of the sus. Aspects – CT
- People should be aware of what they are doing and make conscious choices – UR
- In all the courses there will be learning objectives that refers to sus. – CT
- We are now embedding the sus. Aspect int almost everything that we do. – CT
- In the last 2 years we had an enhanced focus on sus. – TD
- We are trying to implement sus. Principles in all our projects – TD
- We are trying to build internal competences around sus – TD

Change

- Part of our strategy is changing the world to a more sus. Place – MA
- We are also educating people to go out and change things – MSC
- It is important to me to work with social responsible clients – A
- We are committed to social change – ZH

Meeting the job market

- My main challenge is to make sure the students can cope with the challenges that work and life brings – TK
- The main purpose of our education is to bring people to employment – MSC
- The overall objective is to develop skills for gaming and interaction design – A

Others

- The sus. Is part of the viability criteria of every project – CT
- Our main focus is on materializing a solution – CT
- We are trying to expend the idea of design – ZH
- It's 'the art of living in a damaged planet' - ZH

SUSTAINABILITY

What is sus. About?

Showing info

- It's always a matter of angle – CT
- For visual designers it's more about show casing info.- VD2
- We can make sus. Info. More appealing – VD2

Campaigns and branding

- A visual designer will collaborate on a brand strategy – TD
- There is a huge impact communicating the sus. Mission through your brand – TD
- You can make a lot of impact by building sustainable brands+ how you communicate – TD
- Visual design can do sustainability campaigns – VD2

Related to materials

- When we work digitally, I don't know what could be changed – GD1
- Sus. Is more relevant for fashion designers and furniture since they are using raw materials – VD2
- I'm only using electricity – VD2
- As graphic designers everything that we make comes from materials – VD1
- In the context of sus. I can only think about trash – GD1
- It's about using a lot of stuff you don't necessarily have to use – GD1
- The graphic design area is not as itself very polluting TK
- There is no great deal of materials in the GD/VD field – TK
- Sus. Has a lot to do with how we use our resources and how we recycle our waste – TK
- Game design doesn't have a big CO2 footprint

Shaming and blaming

- The main climate sinners are in the other programs – TK
- Perhaps design is also part of the problem in the context of sus. – MSC
- There is a lot of shaming in sus. Now days- TD

Personal perspective

- It became inevitable to be concerned about sus. – VD1
- Most of the time I don't think much about sus. – GD1
- In my daily life I think about sus. A lot – VD2

Non-materials

- Sustainability is not about materials – UR
- Sus. Is not only about materials – ES

Connecting the dots

- Sus. Is across the entire value chain – ES
- Sus. Is about creating better links between consumption and production - ES

Straggling with definition

- We have a constant discussion in the program: what is sus. Within this field - TK

Sus. In KADK

Lacking

- We haven't had anything about sus. Gaming wise – GD1
- Sus. Is probably going to come in the study program, and I'll be surprised if it won't – VD1
- We don't really talk about sus. In my everyday school life – GD1

Awareness
- Sus. Should be addressed as awareness, but the students have that when they come – TK
- Sus. Needs to be part of the discussion – MA

Communication level
- There are many events about sus. So the school is very committed to it. – GD2
- The application to the school was centered around the SDG's – VD1
- Sus. Is presented at the school all the time – GD2
- I've seen the world sus. On emails, posters etc. but I don't really know what's going on – GD1
- I know that the school is very up and about sus. – GD1
- We talk a lot about the UN goals. You can just put that on a sticker. – VD2
- They write about sus. At the newspaper and emails – GD2

Campus
- How can we make the campus more sustainable? – MA
- Changing the way the campus operates is also a way to educate people to sus. Behavior. – MA
- I've been asking to implement a more sus. Behavior in the school unsuccessfully – TK
- We "don't take our own medicine" in terms of sus." - TK

Who is responsible?
- We relays on common core modules to teach sus. – A
- A change in the way the school behaves will only come from the students - TK

Other
- We work on different sus. Assignments which are not part of game design – GD2

Sus. Course + lectures

Information
- If we teach the students theories and they don't get to 'cook them' to form and materials – we lost them – ES
- I can't imagine we are sending out designers without the newest knowledge within the field of sus." – MA
- In the sus. Course the students are being informed about different aspects of sus – TK

Related to other courses
- Sus. Is addressed when choosing materials for the hospital project – TK
- Sus. Is addressed in the individual projects either from a campaign or political pov – TK
- The sus. Course should be applied to the project work - ES
- I didn't care about the sus. Course because I thought it doesn't give any meaning. I couldn't see any relation to my field – GD2

Assignments
- We designed a bin as part of our sus. Course – GD2
- We made a research about trash and looked for inspiration – GD2
- The lectures didn't teach me any game related tasks – GD2
- We interviewed people as part of our sus. Course – GD2
- We made a co-design workshop – gd2

- The students were mapping the value chain and user journey - ES

Objectives and goals

- In the course we teach how can they contribute where other parties can't - ES

References

- The students liked the design consultant that gave actual examples from specific brands - ES
- We mainly address sus from perspective of materials – TK
- The references are very product oriented and that leaves the students with a huge question mark - Tk
    - Most of the references in the sus. Course are coming from the product field- TK

Topics

- Our lectures about sus could have been more like showing info. About sus. In a fun way – VD2
- We had lectures as part of the sus. Course. I don't remember what about – GD2
- We worked on goal 12 – responsible consumption and production, and 17 – partnerships around the globe. - ES

relevancy

- I learned nothing - sus. And other fields but I think there needs to be a connection between it all – GD2
- The lectures about sus. Are super interesting but not relevant in my education – VD2
- It was a general perspective of sus. Instead of giving tools of how to use it – VD2
- In the sus course I couldn't see where I can be useful – GD2
- This lecture was quite funny but had absolutely to do with what I'm doing VD2
- It made me think about how I throw my trash out and stuff like that – GD2
- None of the things we have made were centered around sus. Question or problem – VD1

Challenges and constrains

Overwhelming

- It's hard to deal with the complexity – MSC
- The biggest challenge with sus. Is hat there are so many ways of doing it – MA
- The complexity makes it hard to take a decision – VD1
- It's really hard to navigate on that – VD1
- It's a very complex world but sus. Agenda or ideas makes it even more complex – VD1
- It's like a game you can't win – CT
- Sus. Is not something you can arrive at and then finish - UR

Political

- The education is now under pressure to be more scientific – CT
- We have ignored sus. For a very long time also because of inhouse competition - CT

Paradigm

- How can we deal with the 'unmaking' rather than with the 'making'? – ZH
- You are in the business of making new stuff and that's requires new resources – CT
- We are user oriented but also need to consider the market - CT

Changing mindset

- How our deep heritage is something we can exchange for more valuable, meaningful or important stuff in the future? – MSC
- How do we get this reality check and not being trapped in a self confide space? – MSC

- We have an environment that says we need to do certain things because this is how it used to be in the past – MA
- We need to make sure KADK doesn't become Kodak – MSC
- To move our strong and proud tradition of design to a world where we need less design – MSC
- We are encouraged to think that our whole life is about consumption - ES

Existing context

- It takes a very long time to implement new patterns in the system – TK
- How can we act more sustainably with the decisions that we make? – MA
- It's much harder to change something with an existing business model - UR

Old vs. new approach

- I wish we had an open environment to discuss what design should be done regardless to the pat – MA
- The balance between the old teachers with traditional approach and the new people coming is a challenge – it is confusing us and the students – MA
- The staff that had been teaching traditional design skills needed competences development - ZH

Pedagogy

- SDG's sounds easy but they are not – they are not a design brief and they are too general -ES
- It's a challenge to make visual designers understand the power they have in tools – MA
- The challenge is to curate the right amount of stuff – otherwise it's overwhelming – UR

How is it relevant to me?

- It's difficult to address sus. when you have no polluting output – TK
- How do we address sus. Because for ourselves we are not polluting enormously - TK

Others

- You need to be flexible to follow trends and competences and yet precise enough to define the education - CT

Designer's role

Create boundary objects

- Designers can translate ideas to something concrete that people can relate to – ES
- Making something extremely complex tangible is so important and under estimated – ES
- It is hard to understand what sus. Is unless it has a specific form made by designers – ES
- We need tactile and visual examples to understand sus. – ES
- The artifact enables a discussion about stake holders relationships – ES
- Models and design go directly to our senses – that's an advantage – ES
- Designers can make prototypes or test how things should look like – that's a huge contribution in an industry – ES
- Sus. can be discussed through boundary objects created by designers - ES

Making desirable stuff

- We need to use our skills to make it interesting to engage with – not necessary sell it – MSC
- Designers can make things attractive and therefore desirable - ES

Re-frame

- Shift from what's on paper to what design enable people to do - MSC
- We can use design to address problem differently – MSC
- Design can re-frame so why won't we do a new type of solution? – CT

- The SDG's are the most important graphic work that has been done in the 21st cen. – That's the power of G.D. – MSC
- One of the focuses od design today is data vis. – MSC
- Are we looking at the right thing? Are we being manipulated? - MSC

Imagine the future

- How can we use our design skills to make the future tangible and understandable? UR
- How can design be a part of shaping the future by imagination? UR
- Saying through design that it can look different – ES

Improve life

- The most important thing for vis. Designer is to understand the visual impact and toolset to make people's life better – MSC
- Graphic designers needs to be aware that they can do a positive change – MSC
- Ask: should i do it? Msc
- I think we all have as designers some kind of responsibility – VD2
- You have to use the aesthetic competences to something meaningful – UR

Others

- How can you contribute to the environment without just greenwashing? ES
- Design is a powerful tool to make people do something they didn't know they wanted to do. - MSC
- To create new aesthetics, material language and functionalism – ES

Future of design

Change in paradigm

- Design can be a hub for many other things – MSC
- Maybe we should be more considered what we put out in the world – MSC
- We need to make new knowledge to change what design is – MSC
- I believe there's going to be a change in how designers work – UR

Change in education

- How do we live with technology in the future? MSC
- We need t think how we do education in the future – MSC

Less craft

- The actual raw material is our sensory system
- Less and less people are going to be in the details of making books and typefaces- MSC

Bringing the context in

- How is society introduced in a classroom in a form of a chair? – ZH
- We need to think form-function-context - ZH
- We are in a shift of paradigm in design from working with product or specific solution to working with service and system – MA
- We will be more in understanding the connection between me/ people and the world - MSC
- Visual design more towards interaction design and how we interface with the world - MSC

Alternative to capitalism

- Whose shoulders do you prefer to stand on? ZH
- We learned to take things for granted – for things to always be there - ZH
- Design edu. is being relayed on exponential growth, physical materiality and industrialization – ZH

- We have to reconfigure design role from pushing consumption to something else - UR

Other

- We will be working more with making changes – MSC

Skills and requirements

Various skills

- We need T shape people with various skills – TD
- Multidisciplinary teams are needed - TD

Involvement

- Involving the CEO and top management is a key
- In order for sus. To succeed you need to engage the entire company – TD

Teamwork

- It's a multi-paradigm perspective – CT
- We need to figure out how can we do things together – UR
- It's important for the students to reach out and form networks – UR
- Co-creating with communities can be hard but it's an important skill to poses – UR
- In order to change we need to engage in dialogue with other people - UR
- We need listening skills – TD
- Value and present different viewpoints – TD
- Sus. Is very complex – we must collaborate with partners and competitors – TD
- We need to learn from other people's failure and successes – TD
- We need collaborations rather then competitions – TD
- We mix our design approach with our clients expert vision on their industry – TD
- We interviwed many companies to learn from their experience - TD
- You can't do sus. Alone – ES
- Designers should be able to bring other perspectives – MSC
- You can't do sus. Work without collaboration across – ES
- The school can enjoy more collaborations – MSC
- Some generations back design schools ere about the isolated design genius - ES

Optimizing resources

- You need to take a position on the dilemma of using new resources – CT
- We would like our students to optimize resource consumption - CT
- Try to always have a circular mindset – TD
- The most important thing to teach a student is that we value our resources – TD
- HMW create the maximum impact with the minimum amount of resources - TD

Design tools

- If we make a tool without a project connected to it it's hard to use it - TD
- It's better to use our design methods than make rigid tools – TD

Process

- Start by not harming and then see how you can generate new solutions – TD
- We need to bring design early enough in the process – TD

- HMW consider sus. In early stages of the design process? TD
- We need to be part of the whole process, not just in the end of a product to make it look nice – MSCa

Critical thinking

- It's about re-thinking the way we read, get info or get experience – not how do we make the book better – MSC
- I'd like to see more design writing and reading
- We need to refer back and use design as critical and speculative thing - MSC

Knowledge

- Knowledge is super important – TD
- We know that we need to know more about sus. – TD
- We are now interested at: Design for circulariyy, sustainable innovation, transformation, sustainable behavior and sus. Policies – TF
- Knowledge can be many things, also practice – UR
- You can produce knowledge in practice as well – ZH
- Students needs knowledge within sus. – MA
- Designers should have strong knowledge of what works and what don't work – MSC
- The more design you have seen and done; you get a repertoire that is yours - MSC

Communication

- We have to build comm. Skills to communicate across industries - TD

System thinking

- We should be much more fluent and interdisciplinary – Msc
- In order to work with sus. You need to know much mre about systems - MSC
- We normally do viual design as part of a bgger projecy – TD
- You need to understand the context of your work to decide who you are going to generate value for - UR
- If we want to change something, we have to understand how it is connected to the world – UR
- To understand business, they have to understand the system – UR
- You have to understand the system to think about how we can drive an economy in a different way - UR

Sustainability in Visual Design education

An individual workshop

April 2020

Hello and thanks for joining!

The purpose of this workshop is to ideate how can the ‘visual design skills’ which are relevant to sustainability be further developed in the existing classes.

This document contains four assignments:

1. **Shaping the narrative** – overview – 30 min.
2. **Mediating complexity overview** – 30 min.
3. **Shaping the narrative** – develop one idea – 15 min.
4. **Mediating complexity** - develop one idea – 15 min.

The assignment will be followed by a Zoom call:

Presenting and discussing the ideas – 40 min.

I’m available for any question

Hadas

Please write clear notes in any format you choose (PDF notes/ Word file/ a photo of your hand-write). I would like to receive your notes after the meeting.

1/4 Shaping the narrative

- In which existing class can this skill be included?
- In which context?

Use 7 minutes per card to read, watch the study case and write an answer

30 MIN

Visual Design skill
Shaping the narrative

Frame

Look for meaningful problems and frame them within more appropriate and responsible contexts. Treat 'content' as something you do, not something you receive and pass over.

Case Study:

Climate change is a women's issue

This mini-site tells the story of climate change from a woman's perspective. By choosing this framework, the site highlights the impact of what is considered to be an 'objective' term on people's life, and translates an abstract concept into something concrete, to enhance solidarity and concern.

class _____

context _____

Visual Design skill
Shaping the narrative

Entertain

No story is relevant unless someone wants to listen to it. Address serious topics using non-serious means in an entertaining and engaging way.

Case Study:

Minecraft's 'Uncensored Library'

A group of activists built a virtual library inside the Minecraft universe, where gamers can access censored content from all around the world. They, therefore, used the entertaining game platform to overcome censorship and encourage audiences to engage with a serious task.

class _____

context _____

Visual Design skill
Shaping the narrative

Connect actions to outcomes

Connecting our actions and their consequences is key to understanding how our individual choices accumulate into a greater impact on the planet. Create stories to connect between us, the economy, and the world around us.

Case Study:

Spreads of 'Corona' Virus

This abstract animation shows how one person's choices can drastically affect a huge community.

class _____

context _____

Visual Design skill
Shaping the narrative

Amplify weak signals

Highlight little-known cases, with their characteristics, results and underlying values. Making them visible may then feed the wider conversation on socially-recognized values.

Case Study:

Something is happening to Norway

This photo reportage gathers small local stories from all over Norway into one larger picture that demonstrates the increasing effect of global warming. Thus, specific cases that may be perceived as incidental, gain an impact that cannot be ignored.

class _____

context _____

2/4 Mediating complexity

- In which existing class can this skill be included?
- In which context?

Use 7 minutes per card to read, watch the study case and write an answer

30 MIN

Visual Design skill
Mediating Complexity

Make processes transparent

When people have a better understanding of a system or a process (like food or a fashion supply chain), they can make decisions accordingly.

Case Study:
Rails and wheels

By unfolding a production process in a visual way, this booklet enables non-experts to understand it too.

class _____

context _____

Visual Design skill
Mediating Complexity

Rearrange data

By rearranging numeric data, reinterpreting qualitative information, locating information geographically, and building visual taxonomies, we can develop types of graphic shortcuts to describe and unveil the hidden connections in complex systems.

Case Study:
One Soil

The maps in this platform reveal insights about local and global crop trends. Thus, the platform helps to point out changes, predict global trends at all levels, and thereby foster smart decision-making.

class _____

context _____

Visual Design skill
Mediating Complexity

Facilitate thinking

Use visuals in general and sketching in particular both as a means of thinking and as a way of communicating ideas to others. This can help stakeholders negotiate shared understanding and shared meaning about a problem and its possible solutions.

Case Study:
Butterfly Diagram

This kind of low-fidelity sketching can be used to discuss different ideas among the group members.

class _____

context _____

Visual Design skill
Mediating Complexity

Make the invisible visible

Make invisible things that affect us and can be quantified, such as CO2 emissions, visible.

Case Study:
CO2 emission calculator

This platform allows users to calculate how much CO2 emissions they create based on their habits, and offers an equivalent donation to compensate for it.

class _____

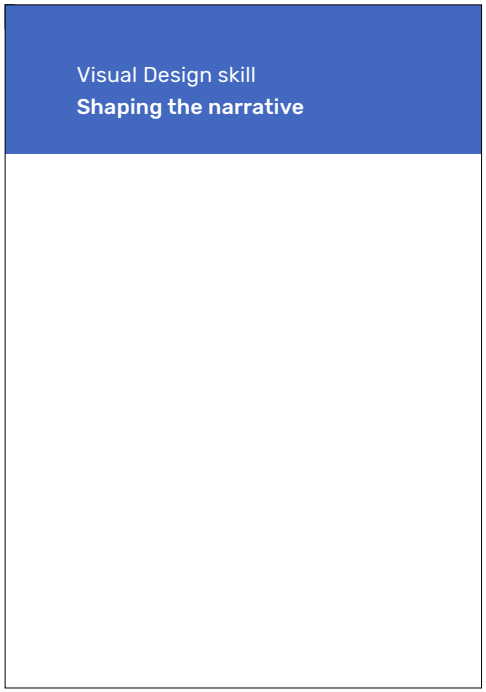
context _____

3/4 Shaping the narrative

15
MIN

Choose one out of the four skills and develop the idea further.

What would an asignment that develop this skill be like?



4/4 Mediating complexity

15
MIN

Choose one out of the four skills and develop the idea further.

What would an asignment that develop this skill be like?

Visual Design skill
Mediating Complexity

14:45

40 MIN

Zoom call

Presenting and discussing the ideas

Addressing Sustainability in Visual Design Education

Hadas Zohar, Aalborg University Copenhagen

In a collaboration with The Bachelor program, The School of Visual Design, KADK

May 2020

AALBORG UNIVERSITY
COPENHAGEN

Table of Contents:

Introduction

This report is the outcome of a master's thesis in Service System Design at Aalborg University, Copenhagen, in a collaboration with the bachelor program in Visual Design at the School of Design in the Royal Danish Academy of Fine Arts (KADK).

In this research, interviews with stakeholders and Design experts as well as findings from the literature, were synthesized to formulate the suggested solution.

The full version of this text, including references, can be found in the master's thesis document.

For the sake of clarity, three main colours will be used in this document to indicate different fields:

VISUAL DESIGN

DESIGN

SUSTAINABILITY

Interviewees and participants

KADK

Students at the Visual Design bachelor program

First-year Game Design student
First-year Visual Design student
Second-year Game Design student
Second-year Visual Design student
Third-year Visual Design Student (A)
Third-year Visual Design Student (B)

Teachers and management

Mathilde Aggebo, the Head of School of Design
Martin Sønderlev Christensen, Head of the Institute of Visual Design
Tine Kjølsen, Head of the Visual Design bachelor program
Alessandro Canossa, Head of the Game Design track
Else Skjold, Responsible to the Design and Sustainability module
Henriette Melchiorsen, Strategic Design teacher
Anna Bascuñan Skaarup, PhD students, the Institute of Visual Design

OTHER INSTITUTIONS

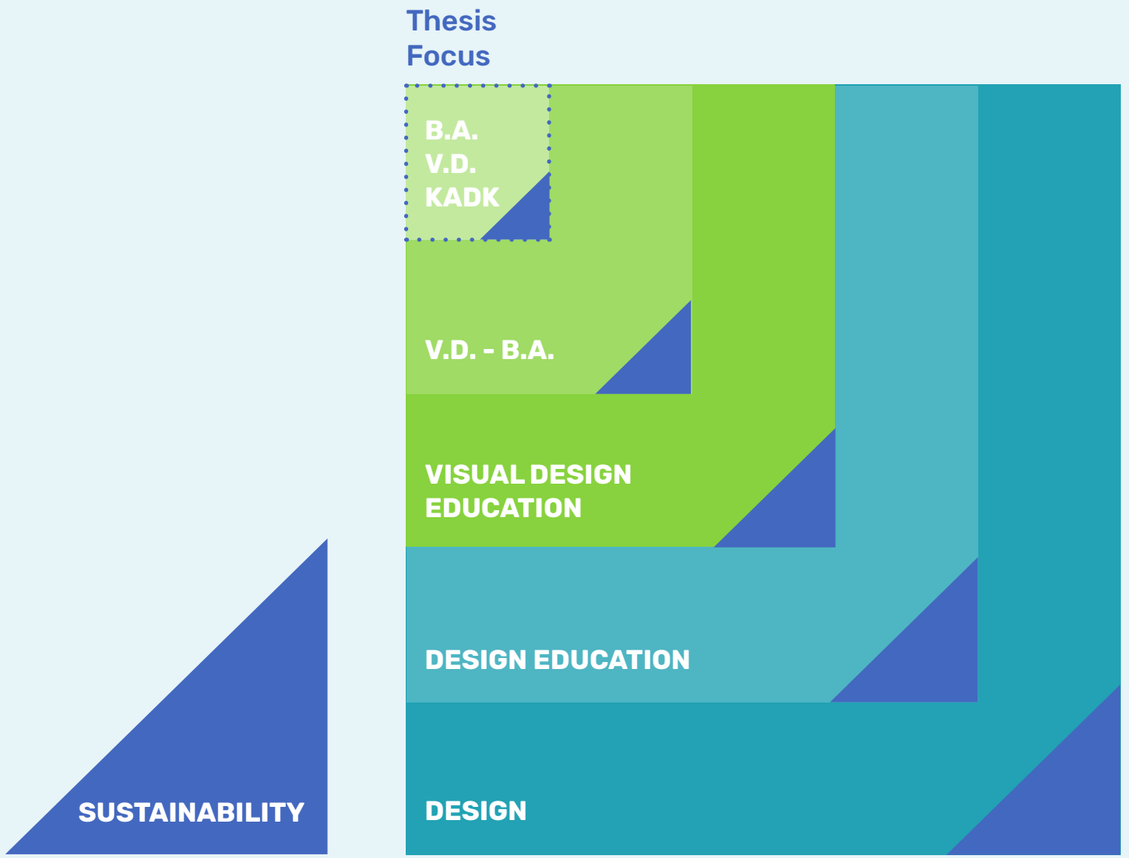
Christian Tollestrup, Head of the Industrial Design Section, AAU, Denmark
Tina Slåttedal Jacobsen, Sustainability Lead, Designit Oslo, Norway
Ulla Ræbild, Program Manager, Design for Planet, Design School Kolding, Denmark
Zeenath Hasan, Program Coordinator, Design+Change, Linnaeus University, Sweden

The context

The context

This report relates to the way Sustainability is being addressed in the bachelor program in Visual Design at KADK.

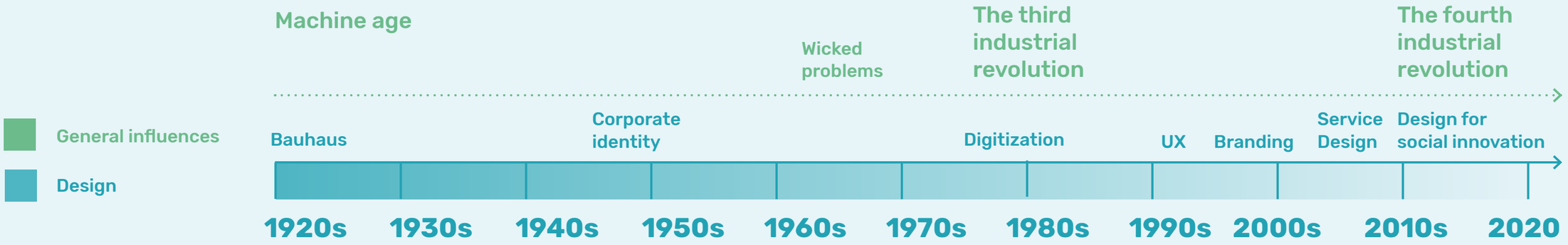
In the interest of providing the reader with the best understanding of the unique situation and challenges in the program, the overall context will be presented according to the following chart:



The Context: **Changes in the paradigm of Design**

Rooted in the rich history of western craft, the main characteristic of Design was in creating a physical artefact. At the beginning of the 20th century, Design adapted to mass-production and manufacturing and became tightly connected to market demand and consumption.

With the development of Electronics, Information Technology and digital distribution, Visual Design turned into a digital field and its outcomes got spread around the world. On a broader context, as global challenges arise, and the areas tackled by designers are greatly expanded.



The Context: **Changes in the paradigm of Design**

At the present time, emerging technologies and broad-based innovations are diffusing much faster than in the past. Together with this, global challenges threaten the planet. As a result, the paradigm of Design that has an inherent connection to wellbeing, technology and living conditions, has changed dramatically, and the areas tackled by designers have expanded greatly. From a craft-based field focused on physical artefacts, Design is now moving towards incorporating experience, service and strategy, aimed at tackling complex problems in various fields.

The following Table summarizes the main principles that have changed in the field of Design over the past century.

	CATEGORY	PAST	FUTURE
THE DESIGNER	**Professional profile**	Designer as a specialist. Focus on artistic skills	'T shaped' skills – designer as a mediator. Focus on communication, synthesis, and interpersonal skills
	Work arrangement – professionals	Individual designer/ Small group of designers	Large interdisciplinary group of professionals
	Work arrangement – geography	Studio in one location presided by master designer	Distributed international collectives
	Relevant experience	Design relied on previous experience and know-how	Previous experience is not enough, due to the unpredictable future. The unstable ground requires a critical perspective
THE MINDSET	**Context**	Production	Business
	Approach to knowledge	Knowledge building	Knowledge sharing
	Correlation to other disciplines	A discipline in itself	A hub for other disciplines
	Working hypothesis	Exponential growth	Limited planet
	Requirements	Use	Care and maintenance
THE TASK	**Main focus**	Making: getting to a final outcome	Planning: the process – how to get to a final outcome and make it possible
	The boundaries	Approaching concrete issues: Form follows function	Approaching systemic issues: Form – function – context
	Level of complexity	Tackling limited areas (objects). Creating things with just few functions from few materials	Tackling broad areas (systems). Creating multi-functional and complex things
	Resources	Making new things	Using limited resources
	Outcome	Tangible	Intangible

The Context: **Changes in Design Education**

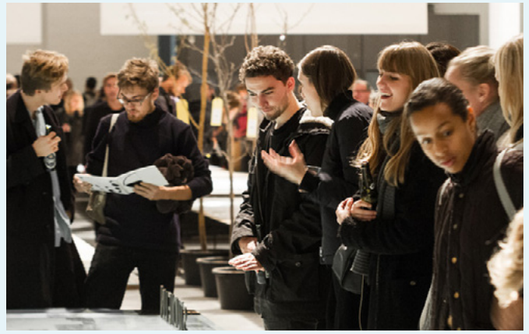
The most popular model for teaching Design is the model created 100 years ago in the Bauhaus School, that was created to reconcile the teaching and practice of Fine Arts with Applied Arts (Design) in the context of the industrial manufacturing process. Even though most Design Schools have moved from this strict point of view, it still sets the tone for most of the existing programs. However, due to the broad changes in Design, Design Schools are now, trying to adapt to the new needs, as summarised in the following table:

	CATEGORY	PAST	FUTURE
THE EDUCATION PROCESS	**Education boundaries**	Working in a 'closed system': focusing on visual semiotics	Relating to social, political, economic and environmental
	Location	Design studio	Various spaces, according to the context. Interacting with people wherever they are
	Project boundaries	Students working within the limits of a given brief	Students frame the brief themselves according to the topic they want to address
	Disciplinary approach	Single discipline	Trans-disciplinary
	Learning	Derived by the teacher	Derived by the group
	Drive	Job market	Societal change
	Program structure	Theory and practice apart	Theory involved in practice
	Knowledge production	Intellectual	Intellectual and practice-based
THE TEACHER	**Status**	Authority and source of knowledge and judgement	Non-hierarchical pedagogy
	Proficiency	Designer	Various fields
THE STUDENT	**Pre-education**	Students have previous craft knowledge	Students have previous technological knowledge
	The 'ideal' student	'Design genius'	Team player

Changes in Design Education : The Challenges

Design institutions that follow a curriculum that was developed over the years and which has survived until now need to find a balance between their own tradition and future demands. Traditions carry a great value, at the same time, a school's tradition can delay further change.

The complexity of accommodating tradition and future demands sets up the constraints for this project. As mentioned by Irwin, "there is always the danger of throwing the baby out with the bathwater" by leaving behind historic roots. Therefore, the strengths and fundamentals of the traditional education should be preserved.



KADK 1903 / 2020

"We have great teachers that have been here for many years and have a more traditional approach to Design, and we have new people coming in, so it is the balance between the great skills and experience from the old teachers and the new agenda – opening up new doors and discussions, so of course we also have this discussion with the staff, and that is of course confusing us and also the students"

Mathilde Aggebo

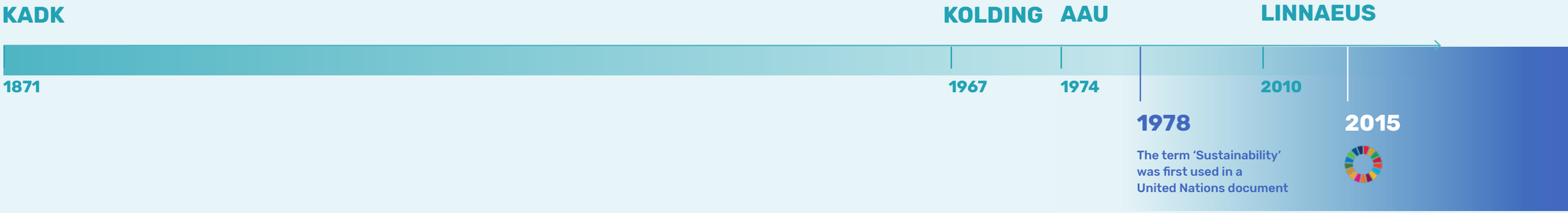
Sustainability in Design Education: **Part of the new mindset**

There are several definitions of Sustainability. However, the most frequently quoted definition is from the 'Brundtland Report' (1987):

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The term 'Sustainability' was first used in a United Nations document in 1978, but it entered into common use only during the 1990s. In 2015, all UN member states adopted the 17 Sustainable Development Goals (generally known as SDGs) to "end poverty, protect the planet and improve the lives and prospects of everyone, everywhere". This framework was adopted by many organizations, including KADK.

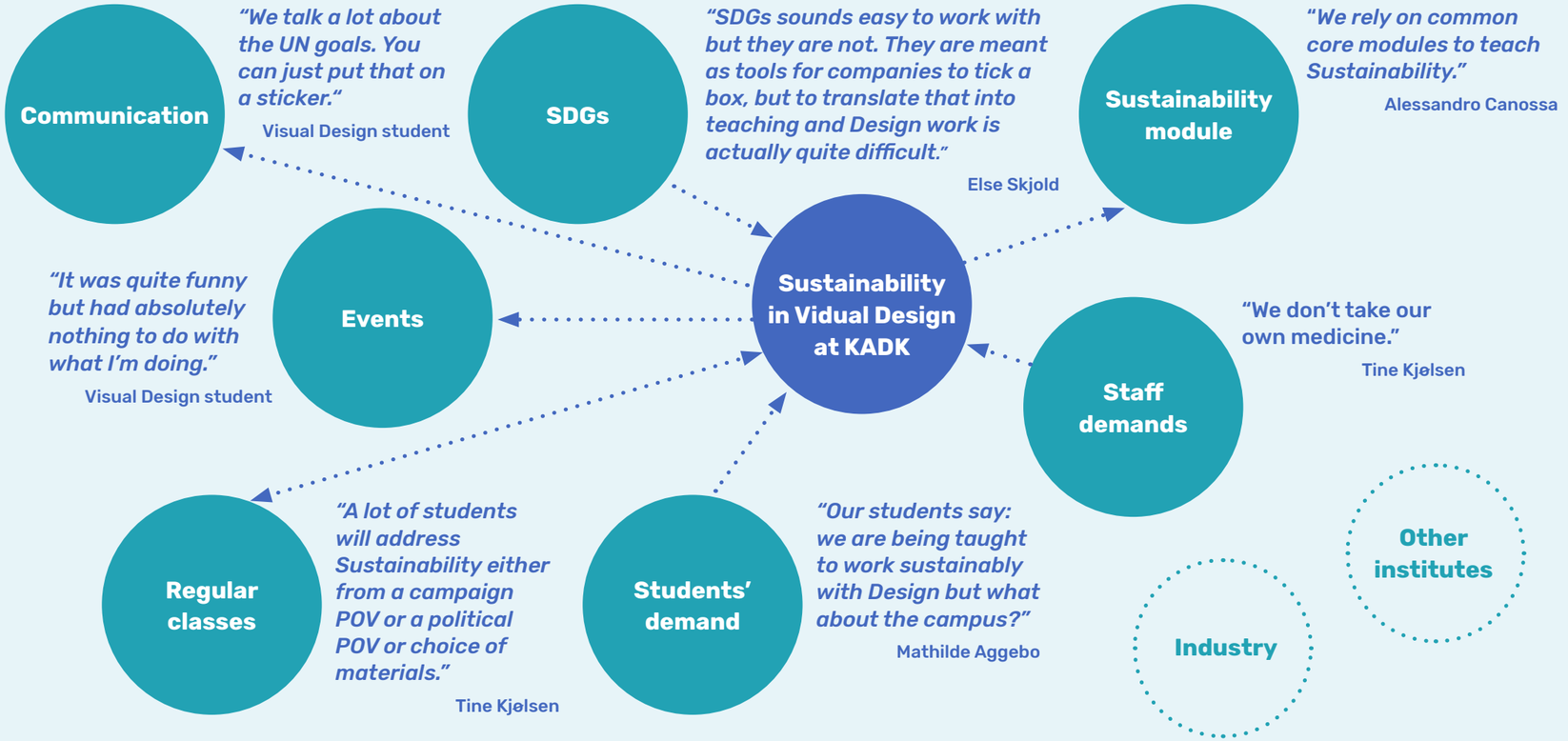
Addressing the complicated context of Sustainability issues requires team-work and the incorporation of different sources of knowledge. Thus, Sustainability is naturally connected to the new paradigm of Design, and at the same time more difficult to implement in a traditional Design Education.



How can Sustainability be included in Design Education which is based in tradition?

Sustainability in Visual Design at KADK

Sustainability is already in use as a framework in KADK, mainly under the overall theme of the SDGs. The following map shows the various contexts in which ‘Sustainability’ appears.

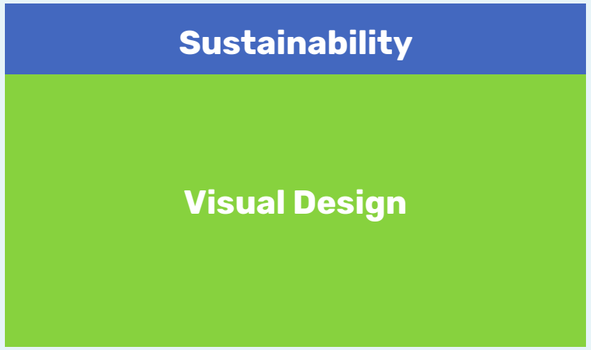


The current model: **Sustainability as an extra layer**

Within the currently-implemented education program, Sustainability is mostly addressed in one of two ways:

1. **General Sustainability lectures** for all students in KADK (not necessarily within the context of Design).
2. **A 'Sustainability and Ethics' common module** for Product, Fashion and Visual Design students, taught from a general Design perspective.

Sustainability in Visual Design is hardly addressed directly. As a consequence, many students do not understand how Sustainability is related to their education, and how can their professional skills be relevant to it. Even though Sustainability is perceived as an important issue in general, the students do not see how it connects to their professional practice.



"It is a super interesting information but it's not relevant in my education"

Visual Design student

"It was a general perspective of Sustainability, instead of giving us the tools of how to use it"

Visual Design student

"I couldn't really see where I can be useful"

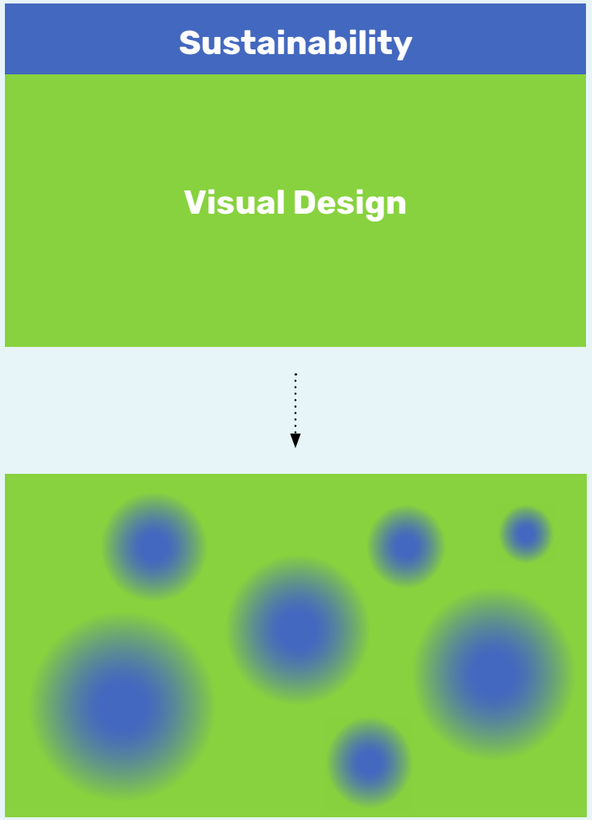
Game Design student

"When we do board games it makes sense, but when we sit around a program and draw digitally, I don't know what could be changed"

Game Design student

An alternative model:
Embedding Sustainability in the professional content

A central hypothesis in this project is that Visual Design students will find Sustainability more relevant once they better understand how they can contribute to it using their professional abilities. To achieve that goal, Sustainability needs to be embedded in the professional courses rather than being treated as a separate topic.



"If we are teaching Design students theories about Sustainability and they don't get to cook that into form and materials – then we have lost them. They will just be bad academics"

Else Skjold

"We have a constant discussion in the program: what is Sustainability within this field?"

Tine Kjølsen

How is **Sustainability** related to me as a Visual Designer?
How can I contribute to **Sustainability** as a Visual Designer?

THE RESEARCH QUESTION:

WHAT CAN WE TEACH VISUAL DESIGN STUDENTS IN ORDER FOR THEM TO ADDRESS SUSTAINABILITY?

The Solution

Principles and skills to address sustainability in Visual Design

The following seven areas are considered as both principles and skills. These are fundamental categories, mastered through training, that need to be addressed as part of the framework of Sustainability in Visual Design. These seven areas will be discussed below. Each of them will be followed by applicable principles that can be used in class in a concrete and operational way.

"The challenge is to curate the right amount of stuff, otherwise it is overwhelming"

Ulla Ræbild

The ‘Onion Model’

The seven principles are categorized under the following groups:

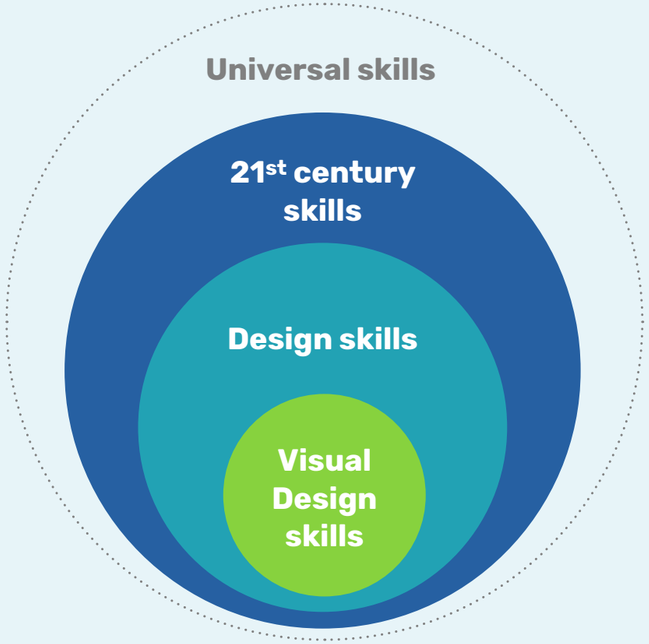
Universal skills – general skills that should be taught as part of any educational process. These are not discussed further as part of this project.

21st. century skills – relevant for designers, as well as for other disciplines.

Design skills – relevant for designers from various disciplines.

Visual Design skills – relevant specifically for visual designers.

In order to better connect Visual Design students with Sustainability, it is recommended to pay special attention to the development of Visual Design skills.



Questioning the assumptions

Graphic Design and consumption emerged simultaneously during the 20th century. This tight connection made it difficult to think about one without thinking about the other. Furthermore, Design supports unsustainable behaviour (through consumption) by constantly striving to make daily practices more convenient. To give new meaning to Design, rather than simply continuing to support consumption through processes and practices such as visual identity, image-making, Packaging Design and branding, it is essential to denaturalize and question this bond.

> *"Designers 'were born' to make products so nice that we want to buy them, to push consumption, and if that's not our role any more, what is it then? It has to be reconfigured completely. You have to use the aesthetic competences for something meaningful... at least so that people are aware of what they are doing and make a conscious choice"*
>
> Ulla Ræbild

> *"We need to use our great skills to make it interesting to engage with – not necessary sell it"*
>
> Martin Sønderlev Christensen

Questioning the assumptions Applicable principles

QUESTION THE ‘MAKING’

Design is a discipline to do with ‘making’ but, unfortunately, we collectively create things that nobody wants. We, therefore, need to downplay the traditional role of physical production in design practice in favour of an approach to innovation which is more social in its means and ends.

IMAGINE ALTERNATIVES

A fresh understanding of why our present situations are as they are, is essential to better describe where we want to be, and is key for imagining an alternative future.

RESPECT WHAT’S ALREADY THERE

Designers are often trained to change things as a default. We can rather use our skills to reveal hidden value and thus mobilize existing resources.

CHALLENGE THE LANGUAGE

There is a visual language associated with growth and innovation. We can re-think the common definitions of these terms by creating alternative representations for them.

Applying systems thinking

With the broadening of the field and the ambition to tackle ‘wicked problems’, which are both highly decentralized and appear in heterogeneous contexts, Design needs to broaden its focus and adapt systems thinking as a holistic Design framework.The traditional axiom ‘Form follows function’ could be usefully replaced by the ‘Form-Function-Context’ principle.

In addition to them taking a systemic perspective, Visual Designers can also assist others in adapting to it. They can use their skills to facilitate the emergence of a system, rather than concentrating on finding solutions to specific and well-identified problems. By creating visual and interactive languages, Visual Designers can present complex systems, thus creating shared visions within multi-actor contexts, support collective learning processes and build common visions.

> *“It will be interesting to do not just designer-to-designer conversation feedback, because then it’s much more looking into form, the language of the things, aesthetics, but maybe bring other actors into this session”*
>
> Martin Sønderlev Christensen

> *“We should stop being at the end of a product, making it look nice and framing it. We need to be part of the whole process“*
>
> Martin Sønderlev Christensen

> *“All the courses here look at systems. If you don’t understand the systems, you can’t think about how we can drive an economy in a different way”*
>
> Ulla Ræbild

Applying systems thinking Applicable principles

LOOK AT THE INVISIBLE:

Visual Designers usually focus on the parts of the system that are the most visible and tangible. However, to make the complexity of a system visible means to show what is latent in order to enable access and intervention to the system itself.

10% - 90%:

When designing an improvement to a common resource (such as a landscape), the design of the device (such as a wayfinding system) will typically only be a small part of the solution; the remainder of the system involves distribution, training, maintenance and service arrangements, as well as partnership and business models. These are just as important.

CONSIDER VALUES AND STRUCTURES

Campaigns to make us feel good about ourselves deflect attention from the underlying values and structures that shape our behaviour in the first place. To tackle a problem in a meaningful way, we must recognize these values and structures rather than ignore them.

RE-THINK THE BRIEF

Systems thinking provides a holistic Design framework for what-to-make or not-to-make, and for how-to-make. Rather than starting a design process from a narrow brief to design something particular, we can start from observing the system and framing the brief accordingly.

EVALUATE THE WORK BY USING VARIOUS PERSPECTIVES

Receive input and feedback from other perspectives rather than Visual Design, to address a broad context and include various points of view.

Cooperating with others

As a complex field, Sustainability cannot be effectively addressed by a single person. Within a typical design team, it requires collaboration between stakeholders having different professional backgrounds, who hold various roles within the group. At the same time it requires to involve and consider the perspectives of non-designers who may be affected. Therefore, collaboration and communication have greater importance in the modern Design work. This makes communications skills mastered by Visual Designers a key to success in every process.

> *"Some generations back, Design Schools were about this isolated 'Design genius' that was a kind of an artist star. We can no longer make an education that is about this type of design role"*
>
> Else Skjold

> *"Look more to real world problems, get involved with other people's problems, and try to go deeper than just the shell"*
>
> Martin Sønderlev Christensen

> *"Capitalism is very much based on competing for the best resources and the best skills. Even though that's the nature of the game, we might need to lower our guard a little bit and open up to share more of our skill sets, learnings, and both our successes and failures, so that other people in the same field can learn from us"*
>
> Tina Slåttedal Jacobsen

Cooperating with others Applicable principles

CONSIDER PEOPLE'S AGENCY

In every project the people and communities affected must be considered. Any design action that rearranges places and relationships is an exercise of power. A good test for the sensitivity of a design proposal is whether it enables people to increase control over their own territory and resources.

INVOLVE THE COMMUNITY YOU DESIGN FOR

Many ideas will come directly from the community being addressed. A main role of designers can also be to act as a coach, guide or mentor.

FACILITATE DIALOGUES

To collaborate with others, people must share a similar vision of what to do and how to do it. Visual Design can be an effective tool in helping facilitate such a dialogue.

CREATE CONVERSATION PROMPTS

Visual Design can be used to create tools to trigger, support, and summarize social conversations.

EXAMINE NEEDS, NOT SYMPTOMS

There is often a gap between people's demands and their real needs. Make sure you address the real needs. That may require challenging the brief and changing it if necessary.

WORK OUTSIDE THE CLASSROOM

This will enable designers to meet people in real contexts. Follow your work to learn how it is being perceived and what can be further improved.

Re-thinking resources

The issue of resources in Visual Design can be addressed from two perspectives: on the instrumental level, the two main resources used in the field of Visual Design are paper (for print) and electricity (for screen-based products). We need to understand how these materials became so dominant, what our limitations are, and how can their usage be reduced to support Sustainability.

On a more abstract level, the matter of resources involves a bigger question that needs to be addressed: Can we move from 'making' to 'unmaking'?

> *"We need to think about the materials right from the beginning, instead of pulling them off the shelf for some aesthetic reason"*
>
> Ulla Ræbild

> *"The most important thing to teach a student is the attitude that we value our resources"*
>
> Tina Slåttedal Jacobsen

> *"The art of living in a 'damaged planet' is a different sort of art than forming something of things we take for granted as being always present"*
>
> Zeenath Hasan

Re-thinking resources Applicable principles

LOOK BACK INTO HISTORY

Becoming familiar with the history of production can help us understand how certain conventions (such as the usage of paper) have evolved. We can then challenge these conventions and look for alternatives.

THINK ABOUT THE SYSTEM

Consider materials and energy flows in all the systems you design. Learn what it takes technically to operate Web-based Design in terms of energy consumption, and what happens to the paper after we are done using it.

BE ENERGY EFFICIENT

Visual Design patterns and techniques which work well for print can quickly turn a website into an energy hog, reduce the quality of user experience, and exclude people with access to less than cutting-edge technology. We need to learn the necessary technical principles to design efficiently for the web.

CREATE NEW AESTHETICS

Visual Design has the ability to create new aesthetics based on upcycling and reusing existing materials.

MORE FROM LESS

Create the maximum impact with the minimum amount of resources.

Working for the long-term

Designers tend to expect results immediately, within hours or a few days at the most. This tendency creates a clash with Sustainability which, in turn, requires a long-term perspective. In addition, Visual Design artifacts appear to hold less potential to accumulate value or meaning over time, since they are often dependent on current trends and communication requirements, or are expected to be constantly upgraded to remain competitive and relevant. To change this situation, we need to think about the significance of Visual Design not through the product itself, but rather in terms of the power to move people, shape meaning, and persuade through both dual visual and verbal means.

> ***"Instead of thinking about optimizing the resources you can look at it in a totally different way – why don't we make something that will keep?"***
>
> **Christian Tollestrup**

Working for the long-term Applicable principles

THINK FORWARD

Consider what may be the future consequences of the design actions you are taking now. Consider the natural, industrial, and cultural systems that are the context of your design actions.

RE-DEFINE THE PROBLEM

Choose a question that can lead to a long-term sustainable solution.

SHIFT FOCUS FROM REACTIVE PROBLEM-SOLVING TO CO-CREATING THE FUTURE

To build a positive vision for the future it is necessary to highlight the gap between a future vision and present reality, and work towards the former.

EXTEND LIFE

Design images, objects, and experiences that have a life beyond the point where the design of the object, product or service has ostensibly ended.

WORK TOWARDS A SLOW DESIGN

Industrial society works on the principle that faster is better, but the victory overcoming distance and duration may carry with it a heavy cost. Can we work towards a design process that benefits and gains value from being slow?

RE-USE

Breath new vitality into a previously existing and/or exhausted valuable cultural or ecological resource, and restore it through one’s design actions.

RESILIENCE

Instill the capacity for design outputs to grow and repeatedly bounce back in the face of unforeseen challenges.

Shaping the narrative

As experts in communication, Visual Designers are responsible both for the ideas they choose to share, and for the way they tell the story. By highlighting content, framing concepts and delivering one message over another, Visual Designers affect what and how others see and hear, and not least – the way we imagine the future. The act of crafting messages using words and images is not simply a method for explaining a text or illustrating it, but rather a process of interpretation that creates new meaning.

> *"Storytelling is very easy for us to put in the context of what we are doing... a lot of games are storytelling"*
>
> Game Design student

> *"How can Design be a part of shaping the future by imagination?"*
>
> Ulla Ræbild

> *"Saying through Design that it could look different"*
>
> Else Skjold

Shaping the Narrative Applicable principles

FRAME

Look for meaningful problems and frame them within more appropriate and responsible contexts. Treat ‘content’ as something you do, not something you receive and pass over.

Case Study:
Climate change is a women’s issue

This mini-site tells the story of climate change from a woman’s perspective. By choosing this framework, the site highlights the impact of what is considered to be an ‘objective’ term on people’s life, and translates an abstract concept into something concrete, to enhance solidarity and concern.

AMPLIFY WEAK SIGNALS

Highlight little-known cases, with their characteristics, results and underlying values. Making them visible may then feed the wider conversation on socially-recognized values.

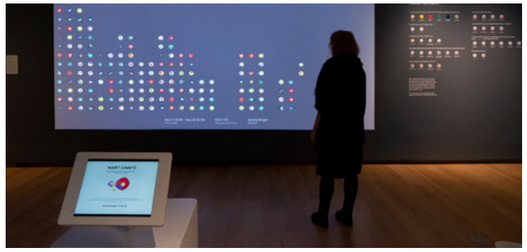
Case Study:
Something is happening to Norway

by Mads Nyborg Støstad and Patrick da Silva Sæther

This photo reportage gathers small local stories from all over Norway into one larger picture that demonstrates the increasing effect of global warming. Thus, specific cases that may be perceived as incidental, gain an impact that cannot be ignored.

IMAGINE

Offer an alternative to the current situation by imagining a possible future in a visual way.



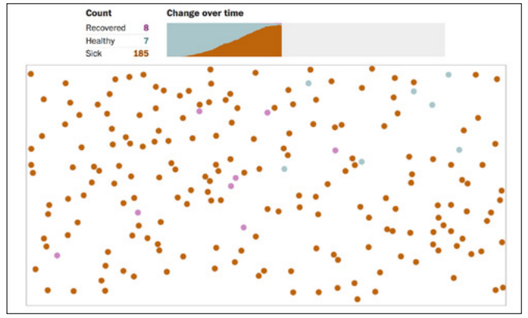
Case Study:
What Counts

by Giorgia Lupi

This exhibition explores a new approach to Census data and shows one way this may be conducted in the future, by exploring the potential of counting people not just with numbers or statistics, but through more humanistic models that recognize (and even emphasize) individuals as complex, nuanced, and multi-layered beings.

CONNECT ACTIONS TO OUTCOMES

Connecting our actions and their consequences is key to understanding how our individual choices accumulate into a greater impact on the planet. Create stories to connect between us, the economy, and the world around us.



Case Study:
[Spread of the Corona Virus]

by Harry Stevens

This abstract animation shows how one person's choices can drastically affect a huge community.

ENTERTAIN

No story is relevant unless someone wants to listen to it. Address serious topics using non-serious means in an entertaining and engaging way.

Case Study:
[Minecraft's 'Uncensored Library']

A group of activists built a virtual library inside the Minecraft universe, where gamers can access censored content from all around the world. They, therefore, used the entertaining game platform to overcome censorship and encourage audiences to engage with a serious task.

Mediating complexity

Visual Designers can help in mediating complexity in two main ways:

Create access to knowledge: We all live with a constant influx of information and need ways to make sense out of it. Visual Designers have the ability to create frameworks to make visual sense of complex information. Their visual toolkit allows them to curate the information and make it accessible, visible, interesting and beautiful.

Facilitation: In a team trying to solve complicated problems, visual representation can create a common platform for discussion, avoid misinterpretation and help build a shared vision.

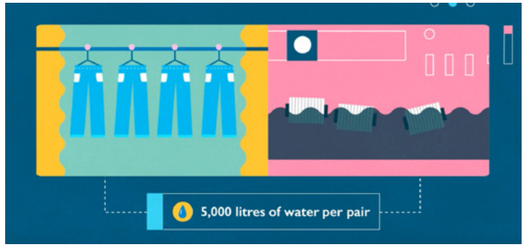
> *"The SDGs are probably the most important Graphic Design work that has been done in the 21st century – to take these very complex issues and give them an identity, to boil it down to these 17 icons, so people can follow them and understand them – it's just the power of Visual Design. You couldn't imagine the SDGs being such an important part of our society if that work hasn't been done"*
>
> Martin Sønderlev Christensen

> *"Making something extremely complex tangible is so important and underestimated"*
>
> Else Skjold

Mediating complexity Applicable principles

CURATE

Choose what to bring to people's attention.



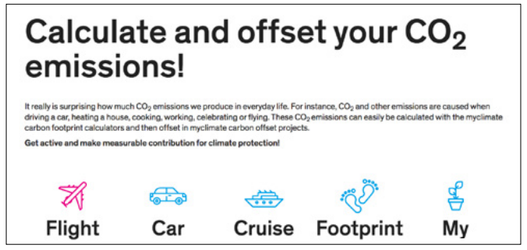
Case Study:
The journey of a pair of jeans

by SokFok studio

This short animation tells the story behind the production of a pair of jeans. The designers chose to describe the entire production process, and thus to bring the environmental price paid to consumers' attention, which a marketing perspective tends to hide.

MAKE THE INVISIBLE VISIBLE

Make invisible things that affect us and can be quantified, such as CO2 emissions, visible.



Case Study:
CO2 emissions calculator

This platform allows users to calculate how much CO2 emissions they create based on their habits, and offers an equivalent donation to compensate for it.

SHARE AND INCLUDE

By including other people's knowledge and information in an open-source practice, the visualization process can become a tool for community building.

Case Study:
Building hopes

by Giorgia Lupi for Google

This is an AR-powered visualization that explores people's hopes about life in general. When opening the app, the user is asked to walk around their immediate surroundings choosing hopes and selecting how hopeful they are regarding each one. Each hope is represented by a colourful stone and these are organized into a rotating sculpture. Once the sculpture is ready, users can explore their data and how it compares to the Google Trends in their area. They can also discover data sculptures created by other people in the same area.

REARRANGE DATA

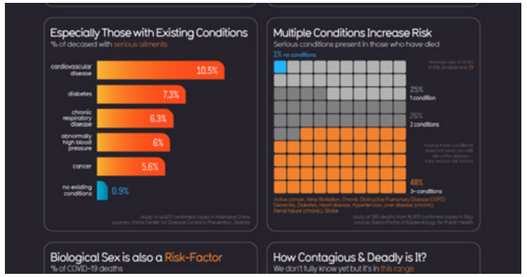
By rearranging numeric data, reinterpreting qualitative information, locating information geographically, and building visual taxonomies, we can develop types of graphic shortcuts to describe and unveil the hidden connections in complex systems.

Case Study:
[One Soil]

The maps in this platform reveal insights about local and global crop trends. Thus, the platform helps to point out changes, predict global trends at all levels, and thereby foster smart decision-making.

REPRESENT DATA VISUALLY

Make data available in an accountable and meaningful way. This allows people in fragile situations to create a sense of a predictable and safe future.



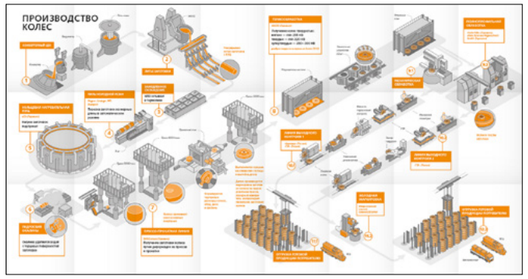
Case Study:
[COVID-19 data pack]

by Information is beautiful

This data visualization created during the COVID-19 pandemic helps reduce panic by putting things in proportion as part of a bigger picture.

MAKE PROCESSES TRANSPARENT

When people have a better understanding of a system or a process (like food or a fashion supply chain), they can make decisions accordingly.



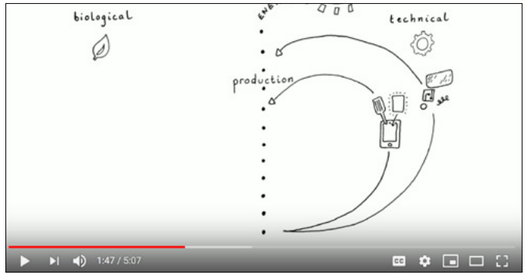
Case Study:
[Rails and wheels]

by Infografika agency

By unfolding a production process in a visual way, this booklet enables non-experts to understand it too.

FACILITATE THINKING

Use visuals in general and sketching in particular both as a means of thinking and as a way of communicating ideas to others. This can help stakeholders negotiate shared understanding and shared meaning about a problem and its possible solutions.



Case Study:
[Butterfly Diagram]

by Ellen MacArthur Foundation

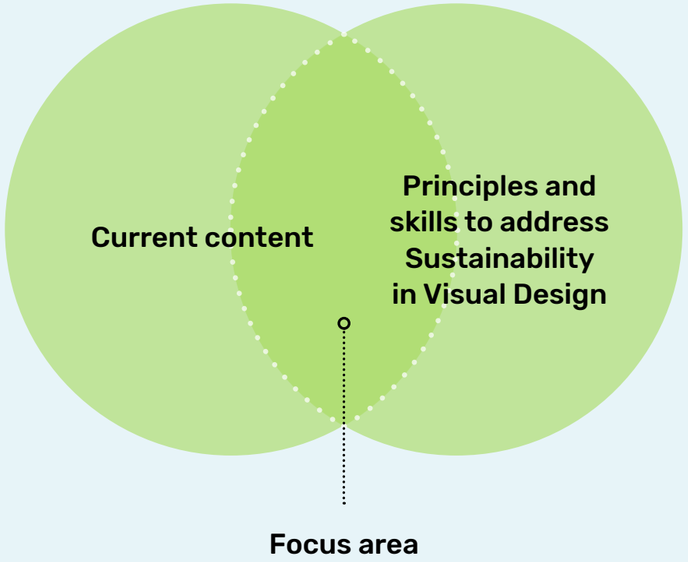
This kind of low-fidelity sketching can be used to discuss different ideas among the group members.

Implementation

Implementing the recommendations

The principles and skills mentioned in the previous section can be implemented in the existing classes of the bachelor program.

The two following briefs, designed by the stakeholders, are brought as an example of how a single principle can be developed into a full workshop, and how it can be used in the context of the SDGs.



Brief no. 1: Connecting actions with outcomes

GROUP: VISUAL DESIGN SKILL

CATEGORY: 'CONNECTING ACTIONS WITH OUTCOMES'

TO BE INCLUDED IN: 'VISUALIZATION AND INFORMATION' THEME

Connecting our actions and their consequences is key to understanding how our individual choices accumulate into a significant impact on the planet. To be able to do so, we need new stories that help us create new connections between us, the economy, and the world around us.

1. Watch the following study case: Spreads of 'Corona' Virus
   This abstract animation by Harry Stevens shows how one person's choices can drastically affect a huge community.
2. Find a line of actions from your own life that shows how a single action you make may connect to other actions and affect others.
3. Create an abstract visualization of your choice according to the following steps:
   - Create the story line: draw a schematic storyboard.
   - Present it to your group members and receive their feedback. Adjust accordingly.
   - Visual research: Collect five examples of abstract visualization. Present them to your group members and mention one thing you find interesting, effective or smart about each.
   - Visual language: Choose one frame from your storyboard and develop it to include the final look and feel.
4. Create a 30-second animation based on the storyboard and the visual language you developed. Present it to your group members and modify the video based on their feedback.
5. Deliver: Two groups present one to the other, each one receiving and giving feedback.

How can the brief be used in the context of SDGs?

Here is a concrete example:

To use the principle 'Connecting actions with outcomes' in the context of SDG 13 (climate actions), modify point 2: 'Find a line of actions from your own life that shows how your own actions creating CO2 emissions connects to other actions and together create a larger affect'.

Brief no. 2: Facilitate thinking

GROUP: VISUAL DESIGN SKILL

CATEGORY: ‘FACILITATE THINKING’

TO BE INCLUDED IN: ‘STRATEGIC DESIGN’ MODULE

Visuals in general and sketching in particular can be used to communicate ideas or persuade others, but also as a key tool for thinking and facilitating discussion. This can help people in a workshop negotiate and share meaning about the problem and its possible solutions.

1. Watch the following study case: The Butterfly Diagram
   The two designers use a visual sketch to help explain an idea, and create a basis for discussion. The sketch is drawn gradually to follow the conversation step by step. See this as an example of a low-fidelity sketch used to discuss and communicate different ideas among the group members
2. Choose a business model from one of the two collection models used in class.
3. Create a low-fidelity sketch to visualize the model. You will use this visualization later on to explain the model in a co-design workshop.
4. Get together with your group members. Each one of you should now sketch your models for the others.
5. Discuss: What do you understand from each other’s models? Give visual feedback on how things could be presented in a different way.

How can the brief be used in the context of SDGs?

Here is a concrete example:

To use the principle ‘Facilitate thinking’ in the context of SDG 2 (Zero hunger), modify point 2: ‘Choose one food-distribution system. Create a low-fidelity sketch to visualize it’.

Further recommendations

The following recommendations are not a direct consequence of the research questions, but rather additional reflections that arose during the process. They are based on stakeholder feedback as well as further reflection, and are articulated here for further consideration.

Content

ADDING PROCESS AS ANOTHER FOCUS AREA

Visual Design was traditionally understood as a finishing touch to some product or process, with a focus on aesthetic form-making. This role is now expanding by addressing wicked problems which make the process an end into itself. Thus, Visual Designers need to be equipped with the relevant tools and mindsets in order to contribute to a successful process. A way to enhance the context of the process is to use visual skills, mostly used for the development of an ‘end-product’, in other steps of the process such as research, pitches, and group work.

IMAGINING THE FUTURE

Visual Design often strives to ‘capture the moment’ and create a contemporary representation of the present. However, to support a positive change in the way we live, visual tools are also required to negotiate and imagine a preferred future.

CONNECTING THE PERSONAL AND THE COLLECTIVE

Many assignments given to the students are centred on their personal experience and point of view. Connecting the personal to a larger context is likely to help develop their ‘systems thinking’.

The role of Design

KEEPING AN OPEN DISCUSSION

We live in times when the role of Design is changing dramatically. This is evoking many questions and uncertainties both in the Design community and in Design Schools. An open discussion about this issue can help students better understand why they are studying certain things and not others. Such a discussion can also help align expectations between the students and the school.

DEFINING STUDENTS' CAPABILITIES

Due to the rapid changes in the role of Design, potential clients and partners often harbour an insufficient idea of what can designers do and what is, or could be, their role in the process. Thus, a brief given to the students by a client is likely to reinforce the traditional role of Design rather than allow them to acquire new relevant skills. This also impacts the students' own perspective about their roles as designers.

Teaching

TRACKING THE WORK

Design projects often end up when deliverables are handed out to the client. However, it would often be beneficial for the students to be able to follow their own work further, get real feedback and see people's responses. "It is only during the implementation phases that the reality of the world imposes itself most strongly, requiring revisiting and changing many design decisions" (Meyers et. al. 2020).

CONNECTING THE SUBJECT TO VISUAL DESIGN

New students thrown into interdisciplinary courses often find it difficult to understand where these are positioned in relevance to their own discipline, and what connection do they have with their education. To keep them engaged, keeping a link between the wider context and their specific line of study is essential. One way of doing so is to clarify this connection explicitly. Another way is to use references from their own core discipline.

BROADENING THE DISCOURSE

Working in multi-disciplinary teams within the context of ‘wicked problems’, involves conversations which go beyond the normal disciplinary discourse. Studying in a trans-disciplinary context where experts from other fields relate to visual communication, and receiving critiques from non-designers as well as from other students, can better prepare the students for such a reality.

CREATING AN ‘EXPERT BANK’

Connecting with an external expert to enrich learning or establishing collaborations often depends on the teacher’s own network, which is naturally limited. Creating an ‘expert bank’ in the program can help students and teachers reach and connect with the most relevant people.

CONNECTING THEORY AND PRACTICE

Theory and practice are traditionally taught by different teachers in separated contexts. Bringing them together can enrich practice while also making theory more relevant.

Timing

THERE IS NO BETTER TIME THAN NOW

The COVID-19 crisis brought us to a unique moment in time where it is clear that sustaining our future will require radical changes in the way we live. This is true for many aspects of our lives, and Design is no exception. As mentioned by Klein, changes that seemed to be too radical just a short while ago are now suddenly perceived as essential. This creates an opportunity to question fundamental assumptions and discuss what the future may be like.

Comments are welcome

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