

1 Situated Methods in Design

Jesper Simonsen, Connie Svabo, Sara Malou Strandvad, Kristine Samson, Morten Hertzum, and Ole Erik Hansen

1 Introduction

Life in contemporary society is saturated by design. We live in designed environments, we are surrounded by design objects, and in many situations our attention, capacity, and movement are affected by design. Today design penetrates areas far beyond the traditional craftsmanship-based design professions. It takes place in domains as different as health, culture, education, business, transportation, and planning and involves “shaping and changing society” through processes that are at the same time “intentional, situated and emerging” (Simonsen et al. 2010, 203). In addition, design is spreading to universities, which engage in design research and initiate new design-oriented study programs worldwide.

The act of designing involves many participants. As such a participatory endeavor, design can be defined as “a process of investigating, understanding, reflecting upon, establishing, developing, and supporting mutual learning between multiple participants” (Simonsen and Robertson 2012, 2). In this book, we employ the notion of situated design because design processes take place in particular situations and are carried out from embedded positions (Haraway 1988; Suchman 1987, 2007). To say that design is situated is to highlight the interactions and interdependencies between designers, designs, design methods, and the use situation with its actors, activities, structures, particulars, and broader context. Situated design acknowledges the tinkering and negotiation involved in designing things—tangible as well as intangible—and making them happen as intended. Phrased in a slightly different manner, a situated design deals with all the “thinging” that goes into the making of things. Bjögvinsson, Ehn, and Hillgren (2012, 102) emphasize that “things” being designed are not merely objects: “A fundamental challenge for designers and the design community is to move from designing ‘things’ (objects) to designing Things (socio-material assemblies).”

Design methods are often described as though they are universal and can be applied in the same way across contexts. In this book, we take the reverse point of view and present eighteen situated design methods, all of which acknowledge the situated

nature of design. With the expansive development of the design field, design methods have also become multiple and diverse; various domains (re)produce their own ways of designing and ways of approaching design through domain-specific design methods. We acknowledge design methods as a spreading and heterogeneous phenomenon and take an interdisciplinary point of departure by recognizing design as a creative act that combines and merges multiple disciplines. The designed environment may be understood as a field of ongoing engagements and entanglements, in which design processes comprise series of negotiations and rearrangements that introduce new designs and change established designs by combining them in new ways (Highmore 2008, 3). This presents a central challenge for design methods to be able to conceptualize and orchestrate the experience of combinations of designs. It stresses the relational and process-oriented aspects of design and design work and highlights the idea that users of various sorts play central and ongoing roles in the enactment of designs. The user roles include adoption, use, participation, appropriation, tailoring, maintenance, work-arounds, appreciation, and so forth.

In a design-saturated society, design also becomes the subject of university-based research and leads to new educational programs. European design and architecture schools rooted in practice and craftsmanship are increasingly implementing academic criteria in their programs. This reconfiguration of design education revolves around an integration of a traditional academic analysis of a human or societal issue and a creative design solution to this issue. Whereas the traditional academic analysis can draw on established academic conventions (regarding research methods, philosophy of science, and theoretical approach), the design solution is not as easy to account for: How did you come up with your ideas for the design? How did the techniques employed support you in working with these ideas? Why did you choose a specific design over other options? How can you justify the design academically? In short: What is the relation between the analysis of the situation and the resulting design solution? Questions such as these are difficult to answer, and they call for methodological considerations. With this book, we offer a selection of resources for such considerations.

The design methods presented here emerge from a constructive and creative academic community where it is the specific empirical setting that defines the focus of research and the relation between the disciplines. Our book has grown out of an academic tradition focused on the theoretical and methodological aspects of the relation between scientific analysis and design processes. This academic tradition includes collaboration between researchers from different fields and external partners based on an explicit ambition of rethinking the relation between traditional academic curricula, research, and education. Related design study programs include problem orientation, interdisciplinarity, and project work, where the participants' definitions of the problems decide the types of disciplines relevant to the analysis (Andersen and Heilesen

2014). Growing out of this tradition, the chapters in this book take interdisciplinary points of departure in presenting methods and exemplary cases from a variety of design areas, analyzed with vocabularies from a variety of academic disciplines.

This way of studying design is in line with the concept of mode 2 knowledge developed by Gibbons et al. (1994) to define practice-oriented scientific knowledge. It stresses that analysis and design should be carried out in continuous dialogue with the field and in collaboration with participants. This twists the notion that the validity of knowledge is determined solely in the scientific community: for knowledge and design produced in its context of application, the practical applicability is an important criterion for assessing the success and robustness of scientific insight. Thus the scientific quality of analyses and designs is assessed through the involvement of stakeholders and based on contextual criteria.

Another important aspect is the relationship between this kind of design studies and the scientific disciplines. The dialogue between the researchers and the field establishes what scientific knowledge has to be developed and applied. This can lead to multidisciplinary research strategies combining different disciplines, to research strategies that are interdisciplinary in the sense that the development of new scientific knowledge is based on elements from various disciplines, or to an integrated form of interdisciplinarity—also known as transdisciplinarity (Gibbons and Nowotny 2001)—where the engagement with the design field establishes a new kind of scientific knowledge in which no fixed boundaries separate the disciplines.

This book is intended as basic reading for interdisciplinary design programs at undergraduate and graduate university levels. Each chapter presents a situated design method. The methods are the result of experienced design researchers' synthesis of extensive empirical experience and aim to make students and interested practitioners reflect on how to conduct design projects and, especially, how to apply methods in these projects. Learning to master situated design processes requires that descriptions of theoretical, methodological, and empirical knowledge are combined with accounts of actual experiences. Therefore each chapter includes a case, which supports reflection on how to adapt and use the method. To help the reader orient and navigate through the book, the chapters open with a short summary of four questions: *What* kind of method is presented? *Why* is the method relevant and important? *Where* can you use the method? *How* does the method address situatedness?

In the remainder of this chapter, we elaborate on the interconnected themes represented in the title of the book: situated, design, methods. First, we discuss situatedness by outlining four ways of addressing this concept: situated knowledges, situated action, situated learning, and situating contexts. Second, we unfold the notion of design thematically by distinguishing between aspects related to design projects as a whole, collaborative processes, aesthetic experiences, and sustainability. Third, we introduce the eighteen methods and present a navigation table listing central

characteristics of each method. An appendix at the end of the book provides questions for each chapter to inspire discussion and reflection.

2 Situated

In this book we emphasize that design methods are situated. There is no one, agreed-on authoritative definition of situatedness. Rather, different researchers have defined and used the concept in related but different ways, as situated knowledges, situated practice, situated learning, and situating contexts.

Donna Haraway (1988) introduced the notion of *situated knowledges*, arguing that knowledge is situated and partial. Knowledge production takes place under specific historical, political, and situational circumstances. These permanent partialities must be taken into account in understanding and relating to knowledge claims. To emphasize this point, Haraway talks about knowledge in the plural, as situated knowledges.

The concept of situated knowledges is an argument against universal knowledge claims, which Haraway sees as irresponsible in the sense that the knowledge producers erase the association between themselves and their claims. By disclaiming the active participation of the knower in constructing her or his representations, knowledge claims appear objective. In Haraway's words, universal knowledge claims are "ways of being nowhere while claiming to see comprehensively" (1988, 584). Importantly, Haraway is similarly critical of relativistic knowledge claims, which evade responsibility by presenting themselves as equally attentive to all possible positions. The association between the knowers and their claims is again disclaimed, but in contrast to universalism, relativism is "a way of being nowhere while claiming to be everywhere equally" (584). The fundamental similarity of universal and relativistic knowledge claims is that they let knowers escape responsibility for the representations they construct.

As an alternative, Haraway proposes to hold on to the particular, partial, and embedded and thereby to ground knowledge by accounting for how it is locally and historically contingent. In this way, knowledge becomes situated, and knowledge claims become "views from somewhere" (590). If we locate knowledge somewhere in particular, then it is no longer independent of other knowledge claims but involved in a continuous process of joining partial views and living within limits and contradictions. This process involves searching for connections and negotiating compromises, and it is thereby about the creation and re-creation of knowledges in communities, rather than about isolated individuals' knowledge creation.

Haraway's argument for situated knowledges and against the possibility of universal knowledge has also been developed in relation to design (e.g., Bjögvinsson, Ehn, and Hillgren 2012; Büscher et al. 2001; Suchman 2002). For example, Lucy Suchman (2002) suggests considering design as located within networks and practices.

Suchman (1987, 2007) challenges the traditional view on the relationship between plans and action by proposing that plans are merely resources for *situated action*. This means that plans are seen no longer as set procedures simply to be acted out but as guidelines that can be altered in accordance with the situation at hand. The far-reaching implication of this proposal is that the focus shifts from devising plans to acting in concrete situations, the details of which defy any detailed specification in plans. To illustrate the two opposing views on the relationship between plans and action, Suchman (1987, vii; 2007, 24) quotes Gladwin's description of the contrasting ways in which ancient European and Trukese sailors navigated. The European navigator started by devising a plan that prescribed a sequence of actions to follow. If unanticipated conditions occurred, replanning took place, and the new plan was followed. The Trukese navigator, in contrast, started with an objective that remained fixed but merely specified a desired end result. As the voyage proceeded, the Trukese navigator continually adjusted his or her actions in response to the unfolding situation so as to achieve the objective.

Suchman maintains that plans are important resources for action, but the role of plans is fundamentally different from rule following because plans, when viewed as resources, do not in any strong sense determine the course of action. In this way, action is situated in that it is shaped moment by moment in response to local contingencies. Suchman elaborates the relationship between plans and action by an example of planning how to proceed with a canoe trip through a series of rapids. When meeting a challenging series of strong rapids, you might take a break to look at the path ahead and plan your descent. However detailed you make the plan, your actual behavior, once you enter the strong current, will depend on the situation at hand: "The purpose of the plan in this case is not to get your canoe through the rapids, but rather to orient you in such a way that you can obtain the best possible position from which to use those embodied skills on which, in the final analysis, your success depends" (Suchman 1987, 52).

The consequences of Suchman's position with regard to design methods are that methods must be approached as potential resources for the designer to orient by within the local context of the design project. A design method should be seen as a general representation of experiences derived from situated action in past design processes. When used in new design projects, the guidelines provided as part of these methods "must be carefully selected, adapted and appropriated to the specific project and situation at hand" (Bratteteig et al. 2012, 118).

Jean Lave and Etienne Wenger (1991) have coined the term *situated learning*, by which they locate learning in the increased access of learners to participating roles in skilled performances. In this way, they question the idea that effective learning can occur in contexts (such as most schools) separated from the social practice in which learners are trained to perform. Instead Lave and Wenger argue that learning is

situated in the sense that it takes place through legitimate peripheral participation in a community of practice.

Legitimate peripheral participation is akin to apprenticeship. It is an integral element of a community of practice, and the learner participates by performing part of the real-world activities performed by the community of practice. The learner's role is legitimate in a double sense. First, the learner is acknowledged as contributing real work that is integral to the practice. Second, the contribution is legitimately peripheral, meaning that the tasks performed by the learner are, initially, simple and intended as much to be vehicles for learning to appreciate the more complex elements of the work. For example, apprentice tailors begin by learning the finishing stages of tailoring, such as ironing finished garments. Ironing is a simple, valuable element of real tailoring but at the same time tacitly makes the apprentice aware of details in the preceding stages of cutting and sewing.

The learning that takes place through legitimate peripheral participation is not confined to the specific tasks performed by the learner. The learner also observes the skilled participants as they perform their tasks, and listens in on their discussions. Witnessing skilled participants as they perform and discuss their work is fundamental to the gradual transition from peripheral to full participation because acquiring a skill involves more than any set of explicit instructions can convey. In addition, it is through the skilled participants' performances and discussions that the standards of full participation are produced.

Rather than assuming a role as teachers, skilled participants in a community of practice are most importantly "embodied exemplars of what apprentices were becoming" (Lave 1996, 153). In other words, the practice with all its constituent tasks and meanings is, normally, performed rather than explicitly explained. Lave (1996) asserts that all knowledge is embedded in context, and, by implication, there is nothing but situated learning. This assertion widens the scope of legitimate peripheral participation from a conceptualization of apprenticeships to a general model of how learning occurs.

Finally, what we call *situating contexts* emphasizes that any design process is embedded in a social context, and the context and the designer's interpretation of it are crucial to the output and outcome of the design process. The relation between actors and contextual structures, including societal institutions, is a debated issue in the social sciences, ontologically as well as epistemologically (e.g., Giddens 1984). Views range from, on the one extreme, an understanding of human action as totally determined by social structures to, on the other extreme, an understanding of society as the result of social interaction. In between, ontological realists argue that the structures are interdependent with the actors' interpretation (Danermark et al. 1997), while ontological constructivists argue that structures consist of collective interpretations (Burr 1995).

In line with Haraway's (1988) understanding of embeddedness, situating contexts entail a focus on how designers interpret and construct the context for the design process to make designs that fit into or stretch the context. Designers are seen as competent actors who operate within the constraints of existing structures. Their practices both influence and are influenced by rules, discourses, and artifacts (Meadowcroft 2007; Shove and Walker 2007). This understanding of how design is situated calls for several types of methods. Interdisciplinary methods are needed to investigate the different ways of understanding the relation between agency and structure, including how design methods must be contextualized depending on the specific situation. Methods to meta-design the context are, in some cases, important to contribute to a process of designing the context and establishing a design space with specific institutions and organizational possibilities to facilitate the design process. Also, methods for reflecting on how to transfer design methods from one context to another are necessary to spread successful ways of working and appreciate the difficulties of doing so.

Situated knowledges, situated action, situated learning, and situating contexts are four interrelated ways of thinking about situatedness. They provide reference points for the treatment of situated design methods in the individual chapters of this book.

A situated design method, following Haraway, implies that design is always carried out with partiality and from a specific, embedded position. Design can only be carried out as "politics and epistemologies of location, positioning, and situating" (Haraway 1988, 589). For instance, partiality, rather than universality or relativity, would be the condition that allows users to be heard and understood in making knowledge claims, as is the case in chapter 8, where experience designs for museums and amusement parks are qualified by stakeholders and users in collaborative workshops. Partiality may also be exercised in the way designers engage with physical surroundings in an ongoing design event. For example, chapter 13 stresses how designers of alternate reality games are continuously receptive to the player's engagement and the properties of the city.

A situated design method in line with Suchman suggests that methods, like plans, are resources for situated action. It follows from viewing design processes as situated action that methods should be seen as ways of supporting design processes, not as recipes for conducting them. While design methods may inspire good questions, they should not be expected to provide authoritative answers. The method in chapter 4 provides four types of resources for situated action: design concepts, design principles, a suggested organization of design projects into four overall phases, and a set of techniques and tools for specific activities.

A situated design method following Lave and Wenger stresses that design processes are embedded in communities of practice. The shared understanding of what should be learned to become skilled is produced through the ongoing practice of the

community; it does not exist independently of the community as a curriculum that can be learned before entering the community of practice. By engaging with the community of practice, design projects can be organized as situated learning. In chapter 10, school pupils are involved in a collaborative process of urban design and construction with adult community activists. This process results in the pupils learning, in situ, about how to change their neighborhood. In addition, the adults learn how children and youths can contribute to local development.

A situated design method emphasizing situating contexts deals with the complex relation between the context and the design situation. Such methods involve different actors and stakeholders, as well as societal structures given by institutions, regulation, market mechanisms, and so forth. The challenge is to interpret, work within, and simultaneously reconstruct the context to arrive at a situated design that fits as well as stretches the context. Chapter 17 describes how a designer of an electric car sharing system has to engage in policy processes to establish a taxing system and a parking fee system that makes the design feasible.

Situated design can be conceptualized in multiple ways to address different design agendas, thereby pointing toward diverse design methods. To acquire competence and confidence in conducting situated design, students must undertake design projects that address real-world design problems, preferably in collaboration with, or supervised by, skilled and experienced design researchers. This book provides a portfolio of resources and real-world examples. We present a range of design methods from a community of design researchers with extensive knowledge of cases about information technology, service and experience, communication, culture, health, work life, regional planning and development, urban design, sustainable environmental studies, and more.

3 Design

The book is organized into four parts that target methods for different aspects of design:

- Part I, “Methods for Projects,” provides project-level methods for defining the scope of a design project and organizing the activities in a design project. These methods address the project as a whole (chaps. 2–5).
- Part II, “Methods for Collaborative Processes,” provides methods for organizing individual design activities as part of design projects. These process-level methods include various techniques, representations, and visualizations (chaps. 6–10).
- Part III, “Methods for Aesthetic Experiences,” provides methods targeted at creating experiences rather than supporting goal-directed behavior or the production of tangible products. The design of aesthetic experiences is a fast-growing area involving audiences and participants in the process (chaps. 11–15).

- Part IV, “Methods for Sustainability,” presents methods for sustainable production, technological development, and consumption. These macro-level methods target the relations between designs and their societal context (chaps. 16–19).

Part I concerns the design project as a whole. That is, the chapters present methods for defining the scope of a project, organizing the activities in a project, and deriving insights from a project. Methods for projects are needed because it is difficult to organize and conduct projects successfully. This is true for projects run by design practitioners, as evidenced by the large numbers of troubled or even failed projects, as well as for projects run by design students, who conduct projects as a way of learning by doing. While there are numerous reasons for design projects to become troubled and possibly fail, many projects are troubled for similar reasons. It appears that these troubles partly recur because learning across projects is limited, thereby resulting in repetition of similar mistakes rather than in process improvements informed by the lessons learned in past projects (Hertzum 2008). Project methods are a means of targeting recurring reasons for troubled and failed projects. The chapters in this section help designers successfully manage aspects of a project that are related to its situatedness. While it is easy to denounce universalism, the rationale for the described methods is to avoid not just universalism but also relativism and instead provide methods for what could, paraphrasing Haraway (1988), be described as design from somewhere.

The methods in Part I may support and guide action, but they do not in any strong sense determine the course of action. Action is instead contingent on the particulars of a project, and therefore the process of bridging the gap between method and project is one of fitting the method to the particulars of the design situation. To be situated in this way, the method must provide for learning about the particulars of the design situation, as well as for adapting the principles and processes of the method to the situation.

Part II presents methods for organizing specific design activities using various techniques, tools, and visualizations. The goal is to assist the reader in planning, conducting, managing, and evaluating collaborative design processes and to encourage design students and practitioners to do this reflectively, analytically, and experimentally and to use imagination and playfulness.

Collaborative processes include engaging people across disciplines, ages, and contexts. This is achieved by methods that use tools such as online heart rate diagrams to support a constructive atmosphere, affinity diagrams and diagnostic maps to support collective interpretation of qualitative data, tangible design games to imagine user scenarios, and urban architectural design to engage youths in community development. The activities shaped by the methods form a common ground where participants ideally meet on equal terms, with all their differences, and are offered ways to express their opinions and analyze, discuss, model, and reflect on design

issues. Visualization plays an important role in materially mediating the collaborative processes, and some chapters explore “difference” as a shaping force in creative design. The focus on the situated, creative, and emergent character of design also fosters consideration of culture and ethics in several chapters.

Part III exemplifies methods with the purpose of inspiring the creation of future aesthetic experiences. Experiences are singular events, and their design must thus have a unique or even surprising character to address audiences in appealing ways. The design object, and even a work of art, is considered in an expanded field where users, audiences, and the social lifeworld engage in the design. The expanded field broadens the perspective and includes more people in the process in addition to conventional actors such as the urban designer, sound designer, game designer, filmmaker, and choreographer.

The chapters in Part III illustrate that the design of aesthetic experiences takes place in messy and situated contexts. Whereas aesthetic design has formerly been associated with the artistic genius alone, here we broaden the perspective. Recent aesthetic theories that emphasize the role of the spectators and their participation (Rancière 2009; Bishop 2012) focus on the sharing of the experience (Pine and Gilmore 1999) and the designer’s and artist’s engagement with the site, the social and everyday situations (Kwon 1997). Following these perspectives, Part III proposes to see aesthetic design processes as messy and assembled situations that draw things, sites, and people together in unique and singular constellations.

Because aesthetic experience designs often require the presence and participation of an audience, spectator, or player, the potential of a design is actualized in the meeting with the audience. One may even argue that aesthetic experiences can only be partly designed, as their reception depends on the audience and participants and their capacity to engage and interact with the design. Thus the designed experiences do not in any strong sense determine the audience’s interpretation. Rather, one could argue that aesthetic experience design opens up the design for interpretation and engagement from audiences and participants broadly conceived.

Part IV considers methods for the design of sustainable products, production, technological systems, consumption, and social development. The chapters have a normative and change-oriented perspective. This implies a focus on designing change agents that intervene in processes of transition, transformation, technological development, consumption, and sociotechnical practices. In addition to addressing the analytic and intervening methods at designers’ disposal, the methods here also address how designers can define their roles in such processes.

Design methods for sustainability are needed because our present industrial systems have severe negative effects on the environment. In recent years there has been a focus on global warming owing to the use of fossil fuels, but in general, many important sociotechnical systems (such as energy production, transportation, building,

agriculture, and manufacture) use limited resources extensively and give rise to environmental problems as well as social conflicts. Vehicles with more energy-efficient internal combustion engines based on fossil fuels are an example of a new technology that has reduced the use of limited resources per driven kilometer. The overall use of fossil fuels for transportation has, however, increased because of general economic development. The chapters in Part IV argue that the design space for the development of new products and processes has been conceived too narrowly because it has been situated in sociotechnical settings that are not sustainable.

The examined designs are situated in complex social settings. The chapters analyze how design methods are developed to change industrial systems and organizations, and how designers need to understand the cultural, systemic, and organizational context of the change process. Collectively, these chapters emphasize the necessity of understanding the social and technological context for the design processes.

4 Methods

Each chapter in the book presents a situated design method and illustrates it with an empirical case. In the remainder of this chapter, we briefly introduce the eighteen methods. Tables 1.1 to 1.4 provide an overview of the methods to help the reader navigate through the book. The tables, one for each of the book's four parts, outline the methods by indicating their main approach to *situatedness*, the *design* domain and application area addressed in each chapter, and the focus and label of the *method* described.

Part I, on methods for projects, starts with chapter 2, in which Hertzum presents a method for supporting students in thinking about the focus of design projects and devising a project design. A project design is an agreement among the project participants about the focus and structure of their project. Project designs are devised by articulating the project aim and starting to break it down into component activities. The method consists of four questions. Each question targets a different element of the design process and points toward one of four frequent but flawed project designs. Thus the question that a student feels most strongly about points toward a likely project design and also toward the main risk the student must consider in formulating a project.

In chapter 3, Nielsen and Andreasen discuss how students can plan and continually redesign their project work and how researchers and students together can design study processes that stimulate students' engagement, reflection, and creative thinking. The problem- and project-based approach is a way of meeting the challenges faced by the educational system in the transition from an industrial to a knowledge-based society. Problem-based projects are open-ended and directed at handling unknown and dynamic situations. This is relevant for study programs where students are

involved in self-directed study practices, and where there is a need for collaboration, flexibility, and implementation of technologies.

In chapter 4, Bødker, Kensing, and Simonsen describe the participatory design method MUST, aimed at early information technology design. The authors present their experiences situating the MUST method to domains and technologies outside its original application area. The method has been used for more than a decade in many university courses and in a large number of private and public companies. Today the method faces challenges such as giving users a say in design when users may be employees as well as consumers, citizens, NGOs, social networks, and so forth. Another challenge is that new technologies imply that design increasingly takes place as part of, or even after, implementation.

In chapter 5, Pries-Heje, Venable, and Baskerville propose and evaluate a soft systems approach to design: the Soft Design Science Methodology (SDSM). SDSM consists of seven activities starting with the specific problem and ending with a constructed, but also generalized, design solution. The methodology is evaluated by applying it retrospectively to a case about improving organizational implementation.

Part II, on methods for collaborative processes, begins with Simonsen and Friberg, who, in chapter 6, present two workshop techniques that support collective analysis of qualitative data. One technique, affinity diagramming, identifies core problems that need to be addressed in the design process. The other technique, diagnostic mapping, describes the problems and how to cope with them. Collective analyses offer all participants a voice, visualize their contributions, combine different actors' perspectives, and anchor the resulting interpretation. The techniques are explained through a case where they were used to analyze how a new electronic medical record introduced life-threatening situations for patients.

Collaborative design processes are influenced by the emotions experienced by the participants. In chapter 7, Christrup presents the Wheel of Rituals, which can be used to create specific states of consciousness in a group of designers. These states can be viewed as a spiral movement into the unknown and are connected to embodied emotions and feelings such as happiness, anger, fear, interest, and anxiety. The rituals can promote states that foster creative progress. The Wheel of Rituals uses light, music, measurement of heart rhythms, and balloons. It is described through a project where students design a performance event with user involvement.

In chapter 8, Gudiksen and Svabo present a method for use in service and experience design. Imagining customer journeys in facilitated workshops is a good way of understanding experiences as they emerge through a series of interactions with various objects, social situations, and physical environments. The method is illustrated by two specific participatory-design journey tools: Journey Touch Points and Pinball Customer Flow. Each tool is applied in collaborative design activities related to museum visits, pop-up marketing, amusement parks, and a food festival.

In chapter 9, Frølunde explores how methods and materials can support visually oriented collaborative and creative learning processes in education. The focus is on facilitating (guiding, teaching) with visual methods to support designerly learning processes. Two cases demonstrate photo elicitation using photo cards, and modeling with LEGO Serious Play sets. Using pragmatic and dialogic learning theories, the author describes a reflexive facilitation practice based on four aspects: situatedness, differences, challenges, and reflexivity. The aim of the chapter is to encourage the reader, whether student or professional, to facilitate with visual methods in a critical, reflective, and experimental way.

In chapter 10, Frandsen and Petersen present Urban Co-creation, a participatory design method for use in urban pedagogy. The method consists of a set of guidelines, tools, and techniques through which school pupils can develop an urban design in a collaborative process with inhabitants and organizations in their neighborhood. The use of the method is exemplified in a case study where youths from a disadvantaged neighborhood in the suburbs of Copenhagen designed and co-constructed colorful and imaginative dustbins to handle problems with local littering. The youths learned about the urban environment by trying to change it, and their neighboring community learned how children and youths can contribute to local problem solving and development.

Part III, on methods for aesthetic experiences, begins with chapter 11, in which Samson outlines a method for assembling urban spaces based on aesthetic materialism. In recent culture-led practices of urban design, designers seek to create urban spaces by following a situated, collective, and aesthetic approach that aims to align with users and existing material and aesthetic resources in the urban environment. Aesthetic judgment is not reduced to the skill of an artistic mastermind alone but rather understood as a dispersed, participatory, and assembled process that emerges from the urban environment.

In chapter 12, Groth presents a method for the early stages of producing portable audio designs like, for example, audio walks and audio guides. She focuses especially on the relationship to specific sites, and how an awareness of the relationship between the site and the audio production can be part of the design process. Such awareness requires paying attention to the specific genre, grasping the complex relationship between the actual and the virtual, and becoming acquainted with the soundscape of the specific site by approaching it both intuitively and systematically. The result is an audio production that narrates the actual through the virtual but also blurs the distinction.

In chapter 13, Kristiansen looks at alternate reality games (ARGs), which are urban games that pretend to be conspiracy theories that really are happening in the players' lives. The games are experienced through events, challenges, and collaborative puzzle solving and may evolve through the engagement of the players. The new design

method, Aulaia, addresses the design of ARGs by including directions for generating ideas, exploring sites, writing the narrative, designing the player experience, creating the game challenges, and running and monitoring the game. Urban games are examples of highly situated games, as they depend on contextualized play. Likewise, the design method benefits from both in situ design and situated action.

In chapter 14, Andreasen, Juul, and Rosendahl focus on software-engineering principles. They look at interactive installations that provide embodied, tangible, and immersive experiences. Such installations may deliver light, image, sound, and movement through actuators and may provide interaction through gestures, voice, and sensor signals. The installations are typically driven by specialized software that differs significantly from conventional business software and includes hardware components developed specifically for the installation. With inspiration from conventional software development, interaction design, and creative programming, this chapter considers the development of interactive installations for immersive experiences and their specific design challenges.

In chapter 15, Strandvad presents a pragmatist method for situated experience design. The method derives from empirical studies of film production and performance design and can be seen as a descriptive analysis turned prescriptive. The method consists of three questions to consider when designing an experience: Which techniques are employed as devices? That is, how does conventional wisdom in the field work as a tool to construct the design? Which actors become mediators in the design process? That is, how do various kinds of actors, for example, investors and technical equipment, influence the design process? What program of action does the design outline? That is, what is the intended use that the design aims to realize, and which options for use does the design give? By raising these questions, the method means to assist design processes in action.

Part IV, on methods for sustainability, starts with chapter 16, in which Christensen and Jørgensen examine vehicle design and how vehicle design is constrained by its industrial context. In the auto industry, the development costs of a new product, whether a conventional or electric vehicle, are extremely high. The industry's response is a hybrid design approach, a compromise combining phased and iterative design. On the one hand, finalizing design before production avoids the costs of altering the extremely expensive facilities for mass production of cars. On the other hand, iterative techniques applied in the design phase may provide input about user preferences and inconsistencies in the design.

Hansen and Søndergård continue this endeavor in chapter 17 with a case of emergent design of an urban mobility system based on an electric car sharing system. The authors outline a conceptual and analytic framework for a reflexive design practice for sustainability, including a perspective of structural changes and design as meta-design. They address designing for sustainability as interventions in sociotechnical

systems and social practices of users and communities, and they call for reflexive design practices challenging dominant regimes and shaping alternative design spaces. Designers must obtain an ability to contribute to sustainable transition processes, and the chapter addresses design processes aimed at such sustainable transitions enacted in complex social settings with different actors and agendas.

In chapter 18, Christensen, Kjær, and Lybæk discuss design methods that can assist companies and decision makers in reducing or preventing the environmental impacts of products, services, and manufacturing processes. The authors review the most commonly used design methods and approaches in the field, including methods addressing environmental management, life cycle thinking, eco-design, and industrial symbiosis design. The chapter elaborates on how more or less standardized methods are situated when being used by industries in their local context of technology, economy, and situated knowledge.

Finally, the book ends with chapter 19, in which Neisig reflects on how to transfer design methods in a situated way to new organizations, new social environments, or completely different cultural settings. Knowledge about the contextual dependence of design methods and how to cope with this situatedness is important to designers so as to avoid “blindness” when design methods are transferred from one domain to another. Designing for a sustainable transition is necessary to avoid unexpected difficulties. The chapter provides ten recommendations on how to transfer design methods in a situated manner.

Table 1.1

Part I, "Methods for Projects"

Chapter	Situated	Design	Method
Hertzum (chap. 2)	Situated knowledges and action	Design education Problem formulation for student design projects	Maintaining a focus on the entire design project to learn from iterations among its constituent elements <i>The four-question method for project designs</i>
Nielsen and Andreasen (chap. 3)	Situated learning and action	Problem- and project-organized studies Project work at a postgraduate master program	Basing design projects on problems to bolster situated learning Recommendations about how to learn from projects <i>The problem-based approach</i>
Bødker, Kensing, and Simonsen (chap. 4)	Situated action	Participatory design Health care and energy renovation	Achieving a coherent and anchored vision through genuine user participation and firsthand experience with users' practices <i>The MUST method</i> for early information technology design
Pries-Heje, Venable, and Baskerville (chap. 5)	Situated learning and action	Design science research Information technology development in a bank	Merging practical design with design science research to produce more relevant and rigorous designs <i>The soft design science method</i>

Table 1.2

Part II, "Methods for Collaborative Processes"

Chapter	Situated	Design	Method
Simonsen and Friberg (chap. 6)	Situated action	Identify, understand, and act on complex design problems Electronic medical records creating life-threatening situations	Using workshop techniques to collectively analyze and interpret qualitative data <i>Affinity diagramming</i> and <i>diagnostic mapping</i>
Christrup (chap. 7)	Situated action	Situations where a group is working under pressure and stress Idea generation in Performance Design student project	Explicating and reflecting on emotional state to enable creative progress <i>Wheel of Rituals in design</i>
Gudiksen and Svabo (chap. 8)	Situated knowledges	Service and experience design Customer journeys in museum and amusement park	Understanding experiences as journeys to grasp their temporality and interactions <i>Journey touch points and pinball customer flow</i>
Frølunde (chap. 9)	Situated knowledges and action	Design-oriented education Photo cards and LEGO Serious Play	Using visual materials to support collaborative learning processes in designerly education <i>The PASIR method</i>
Frandsen and Petersen (chap. 10)	Situated learning	Participatory urban design Kids design new garbage bins for their local neighborhood	Participating in real-world design activities to educate and empower urban citizens <i>The Urban Co-Creation method</i>

Table 1.3

Part III, "Methods for Aesthetic Experiences"

Chapter	Situated	Design	Method
Samson (chap. 11)	Situated knowledges	Spatial design, urban spaces The High Line in Chelsea, the LAK festival, and a DIY initiative in São Paulo	Designing with and for the user to create aesthetic urban experiences <i>Assembling urban spaces method</i>
Groth (chap. 12)	Situated knowledges	Portable audio design The audio walk "My Vesterbro" and the audio guide "Do You Remember"	Supporting reflection in audio design to work with the tensions between the real and virtual and between past, present, and future <i>Design method for audio walks and audio guides</i>
Kristiansen (chap. 13)	Situated action	Design of urban games Alternate reality games	Arranging game challenges to create collective problem solving, suspense, and progression <i>The Aulaia method</i>
Andreasen, Juul, and Rosendahl (chap. 14)	Situated action	Interaction design Interactive installations for, e.g., a bumper car competition	Using software engineering and creative programming to create immersive experiences <i>Timeboxing model for interactive installations</i>
Strandvad (chap. 15)	Situated action	Experience design Case studies from film production and performance design	Attending to devices, mediators, and actions to fit creative design processes into universal design methods <i>The pragmatist method for experience design</i>

Table 1.4

Part IV, "Methods for Sustainability"

Chapter	Situated	Design	Method
Christensen and Jørgensen (chap. 16)	Situating contexts	Contemporary automobile industry Design and development of new electric car	Combining elements of phased and iterative design to reduce the costs of developing new products <i>The hybrid design approach</i>
Hansen and Søndergård (chap. 17)	Situating contexts	Sociotechnical design of infrastructures for transportation Early design stages of the Danish electric vehicle system Cleardrive	Reconfiguring mobility systems and practices to obtain sustainable transition processes <i>Framework for designing for sustainability</i>
Christensen, Kjær, and Lybæk (chap. 18)	Situating contexts	Design of industrial systems International standards for resource-efficient industrial systems	Incorporating sustainability in industrial processes to reduce their environmental impacts <i>Design methods to prevent and reduce environmental problems</i>
Neisig (chap. 19)	Situating contexts	The transfer of design methods to new social, cultural, and organizational contexts The jam session, living labs, and Cradle2Cradle	Embracing the situatedness of design methods to avoid blindnesses when methods are transferred across contexts <i>Recommendations on how to transfer design methods</i>

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