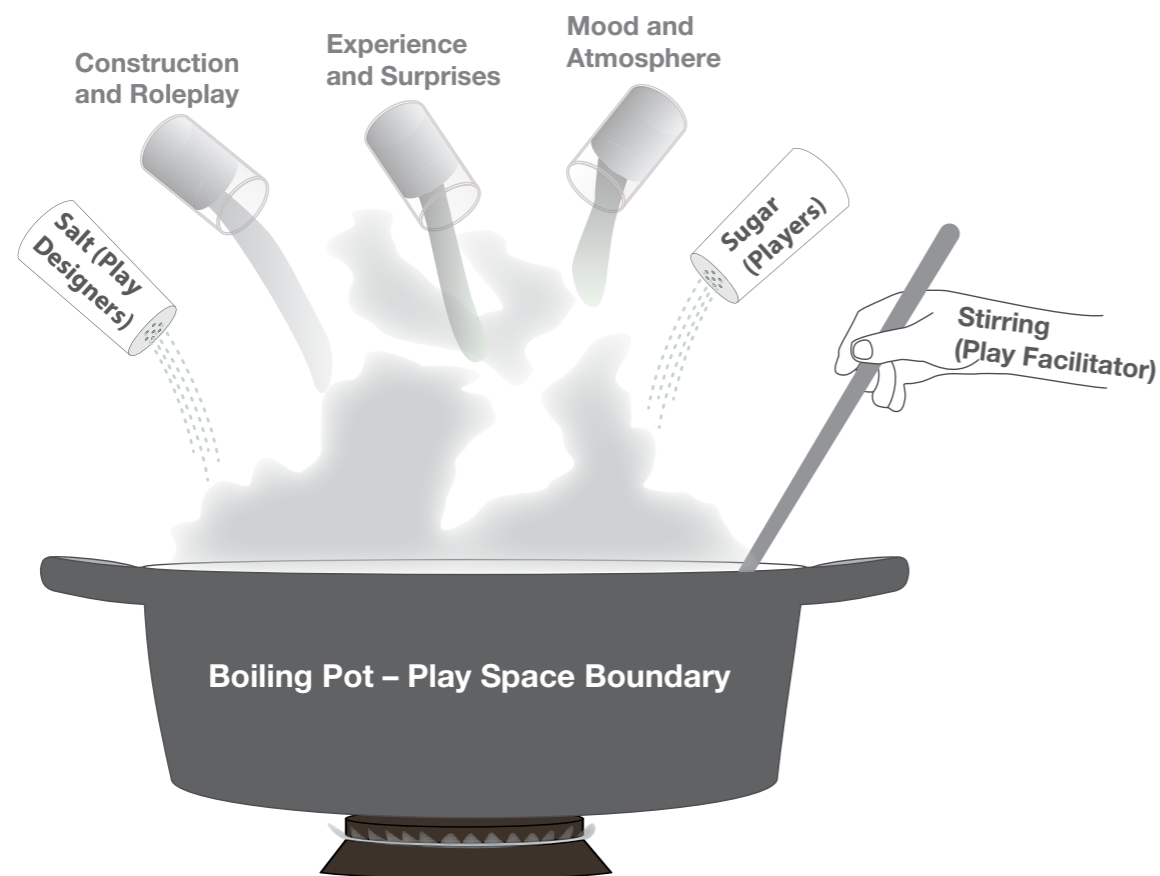


The background of the cover features a pair of hands, one larger than the other, cupping a glowing green sphere. The hands are rendered in a textured, green, wireframe-like style. The sphere is bright green with a shimmering, particle-like effect. The entire scene is set against a dark green background with a subtle pattern of glowing green dots and lines.

Framing Play Design

**A Hands-on Guide
for Designers, Learners & Innovators**

Sune Gudiksen & Helle Marie Skovbjerg



Forewords

This book is one of the early results of a close collaboration between Design School Kolding and The LEGO Foundation, which revolves around a master's programme and a research programme. For this reason, we break with the convention of having only one foreword and present two – one from each collaborator.

By Lene Tanggaard, Rector Design School Kolding, Professor of Educational Psychology

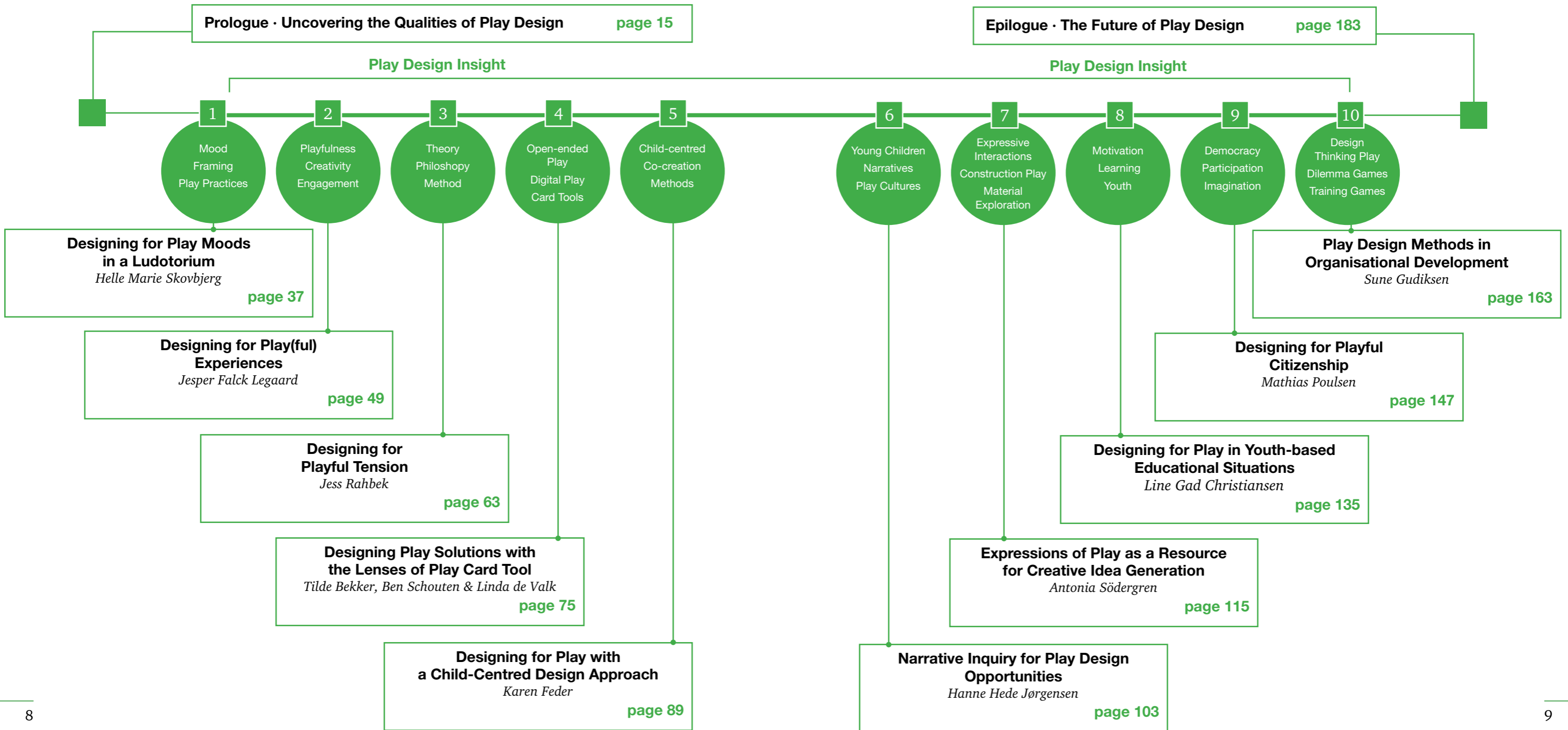
Some years ago, I found myself supervising a PhD student as I had done so many times before. The co-supervisor joined our meeting, and we agreed we felt a bit stuck with too much and too unstructured research data. Furthermore, we were lacking in ideas on how to tackle the situation and the problems it evidently caused for the progress of the project and for the PhD student. Because of this, or for some other reason, we suddenly found ourselves laughing, joking about hydroplanes and how everybody should allow themselves to try one, at least once in their lifetime. Eventually, the co-supervisor commented on our detour saying that we all have to remember to have fun as part of our working lives. It was fun and what is more, we found a solution to our problem. We just had to allow our thoughts to fly away for a little while. The situation taught me how effective playing with your imagination can be in

a serious situation, but it also reminded me of the basic qualities in life and our abilities as humans. Play can help us to grow, throughout life if we are open to it, and allow us to envision new realities using our imagination to create scenarios for improvisation.

In your hands, or on your screen, you now have a wonderful and diversified book on play design. As stated in the prologue, the book is “a primer on applied play design for designers, learners and innovators and covers Northern European play design practice and its unique qualities”.

From my perspective, the combination of play and design adds something very valuable to our common understanding of design, and specifically Nordic design. The book draws a line back to a year-long tradition for user-driven, participatory co-design in Europe. This tradition is somehow ‘understated’, building upon unique, functional and aesthetic qualities. However, play adds something odd or even radical to this tradition. Play is imaginative. It takes us beyond the here-and-now. It allows us to experiment with alternatives and to transport ourselves into an imaginary setting. As most of us have been raised with moving images, the next generations are used to constructing interactive sceneries most markedly through digital computer games. It is therefore not surprising that play design

CONTENT



For some decades and in many circles, play has been regarded as being outside learning spheres and only meant for children up to a certain age. Now what can be observed is a revival of the characteristics and potentials of strong play experiences across lifelong learning target groups and in applied situations, as well as broadly in the product, service and experience development industry. Play can have an extremely positive effect on participants and surroundings.

Play design qualities are strongly linked to participants because they represent qualities *to somebody* (Skovbjerg 2018; Gadamer 2013). If the participants do not relate to the play qualities and find them relevant to their play activity, then their interest will wane. Some play quality examples are: being able to determine one's own path, engaging just for the sake of exploration, exposing oneself to a series of surprises and fostering one's imagination. Product developers and educators need to constantly explore the play qualities of participants. Moreover, the play qualities that can be identified through the knowledge we have about children's play and forms of activities are not necessarily the same as the play qualities to be found among adults. We need to have sensitivity to the diversity of play qualities *to somebody* and be able to design for that diversity.

Participants play a main role in understanding and developing play qualities,

which are not static, but instead dynamic and situated. Design is destined to engage participants who will value the qualities of what we have designed. Design has for many years taken the form of participatory design or co-design (Simonsen & Robertson 2012; Sanders & Stappers 2008; Buur & Matthews 2008; Ehn 1993) and there is a strong tradition in Scandinavia for working with design in close collaboration with users and stakeholders. Co-design and participatory design processes are relevant ways to get stakeholders in a specific development project to experience play qualities first-hand.

We argue that play design consists of a mixture of elements. Let us imagine we have a boiling hot cooking pot of play design influences (see Figure 0.2), in which we have:

The pot: The ludic space boundary – this is the temporal world of imagination that is created through play activities. Such a space is not entirely separate from reality but creates a distance from reality, far enough to explore new meanings.

Salt and sugar: Play designers could be seen as the salt and players as the sugar. Both are needed for high-quality play design. On the one hand, players can invent their own play activities, but, on the other hand, they may not move beyond their own circles of imagination if they engage only in self-initiated play activities. It is here suggested

that play designers, through all sorts of prompts and triggers, can help players activate such new imaginative states.

Five key ingredients: Five key ingredients seem to be present in most high-quality play design activities: (1) metaphors and narratives that often turn into bigger story worlds; (2) rules and procedures that dictate how the play proceeds, whether these are created before or during play; (3) materials and technologies used in a specific play situation – these create object affordances and constraints that lead the play towards specific meanings; (4) challenges in the play activity and feedback loops occurring as a result; and (5) participation and position – which puts participants in the driving seat and chal-

lenge them to explore other angles, perspectives and positions.

Stirring the pot: The pot often needs stirring to turn it into a good dish including play designers, players and sometimes a play design facilitator or play experience facilitator. A key difference between some other design disciplines and play design is that play develops in use and is not just a one-off deliverable. It is design-after-design – in a sense, a full play circle.

Three flavours: Three key flavours can be traced in the history of play, though not all of them are always foregrounded in all play activities: (1) mood and atmosphere; (2) experience and surprise; and (3) construction with role play.

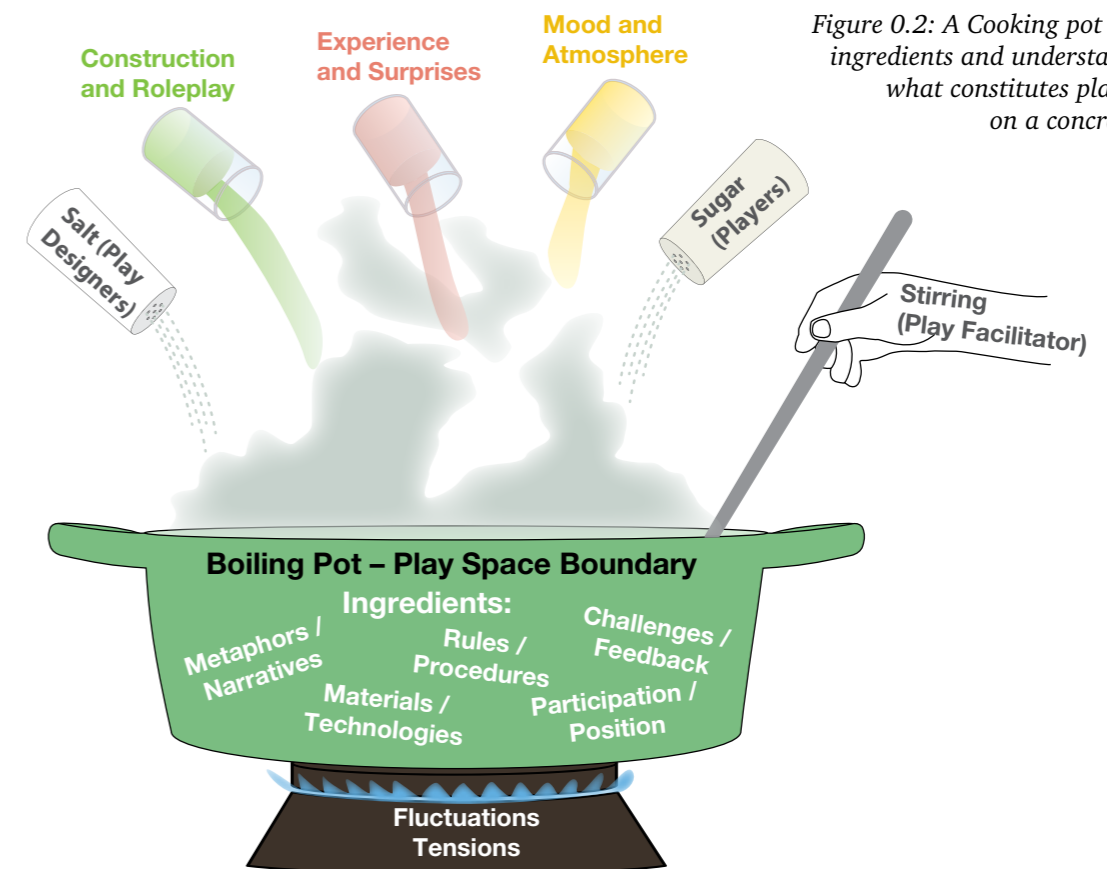


Figure 0.2: A Cooking pot with the ingredients and understanding of what constitutes play design on a concrete level.

participants by brainstorming which playful activities they appreciate most and why. Finally, we collect all the play qualities of the participants' stories to ensure that the meanings and values help set the stage for play.

Case 1 – The Play Order Phase

In the research project, 'Can I join in?', we worked with social educators in two Danish schools as the co-designers of play designs. We held two meetings to create the play order, where we uncovered the play qualities, as described in the first phase of the Ludotorium. We used design tools to support play coverage and brainstorming. The social educator Troels said that he used the first phase of the Ludotorium to immerse himself in the play order and that it was absolutely crucial for him to create a space where the play has value and where he, in collaboration with re-

searchers and colleagues, can create and share this play order.

Phase 2 – LAB: Play Practices as Design Principles

The second phase of the Ludotorium is related to coming up with design ideas formulated from design principles based on the understanding of practice in the mood perspective. In addition, to play in the mood perspective, the play's action is central to the mood perspective. This section explores the actions that can be conducted in play that are conceptualised as play practice (Skovbjerg 2018; Skovbjerg 2013).

Play practice relates to all the 'doings' of play – namely, all the behaviours that one shows when playing, such as physical and mental activities, the use of ob-

jects and toys, ways of relating to others and bodily movements and actions. These play practices create a meaningful universe around the play activity and, as the American play researcher Corsaros claims, players understand play culture through repetition but also occasionally create variations by interpreting what they do. Thus, they innovate play practices through their participation in said practices. The play practices involve repeating the actions and interpreting the actions and, as a consequence, play design is not a product that exists in a well-defined form – rather, it is something that is in constant development through what is done in the play activity.

The mood perspective consists of four archetypes of play practices. The first play practice is SLIDING. Here, the actions are characterised by a strong rate of repetition. They are consistent and uninterrupted, and the player should not change them too much but rather follow that repetition. The following is an example of SLIDING in play: Anna is a four-year-old girl who has been playing with her doll for four hours in the family living room. Anna takes the doll, puts the bottle in the doll's mouth, puts the doll in the cradle and rocks the doll. Following this sequence, Anna takes the doll, puts the bottle in the doll's mouth, etc.

SHIFTING is the second archetype of play practice. SHIFTING actions occur in play

designs where participants use their entire body and move it in different directions and elevations. We often see this practice in large play designs such as trampolines, roller coasters and swings. For an example of SHIFTING, consider someone who is executing continuously high jumps on a trampoline, and then suddenly changes their body's direction and height.

DISPLAYING, the third archetype of play practice, involves an individual performing actions to someone who then judges these actions, like an audience for the play practices. When the actions are performed, there is an expectation that there will be continuous development of what is shown. Examples of these play actions in play designs include circus play and X factor play, where the children repeat some play actions linked to the relevant play design, while also putting personal touches on the expression and extravagance of their act.

EXCEEDING is the fourth archetype of play practice and is characterised by constantly looking to change, mock, tease or humour an individual with the actions that were previously established. The following is an example of this type of play action: Maja and Sarah are playing with puppets. Rather than exhibiting care and tenderness with the puppets, they make them appear angry and perform violent actions. The girls' play practices transcend the cultural codes of puppetry, and they indulge in mania.

Play practice	SLIDING	SHIFTING	DISPLAYING	EXCEEDING
Qualities	Following the practice Not changing Non-stop continuity Adjusting Repetitive rhythm Discrete and introvert	Movement Physical Motion Change in direction, heights and speed.	Showing yourself off Relation between me and the audience Exhibition Public performance	Constantly changing Exceeding of practices Contrast Testing Morbid Conflicting practices

Figure 1.2: Play practices as design principles

that are meaningful and appropriate given the history and the development of the play activity. An important challenge of designing for open-ended play is how to find a balance between, on the one hand, providing some triggers for play and some minimal structure and, on the other hand, not to provide too much structure but leave enough room for improvisation.

Designing for play can be done for diverse design intentions, such as supporting social interaction, playful learning or motivating physical activity. These intentions must match the qualities and opportunities that playful interaction can offer.

Designing for play requires a very iterative design process, in which design ideas are tried out, as it is difficult to determine how the opportunities created will be used by users in specific contexts. The Lenses of Play can be used as a framework for framing, ideation, concept development and evaluation of play solutions. By examining the different perspectives/ lenses designers can explore how to develop a rich and flexible play solution.

Questions to ask about using the Lenses of Play are:

- When do you use, which lens?
- How many lenses to use?
- Do you use the lenses for designing play solutions, for teaching how to design play solutions or for analysing play behaviours?

“An important challenge of designing for open-ended play is how to find a balance between, on the one hand, providing some triggers for play and some minimal structure and, on the other hand, not to provide too much structure but leave enough room for improvisation.”

Overall, open-ended play is a design quality that needs to be decided on *early in the design process* as it guides some basic design decisions about how play opportunities are provided by the play objects. However, in different phases of the design process, reflecting on whether the design still meets this play quality is important. Forms of play is another lens that can be helpful early in the design process for exploring design directions and framing a design brief. The set of playful experiences can also be a starting point to think about how something might be playful. Is it because there is a surprise, unexpectedness or exploration or because there is competition or collaboration?

In a *middle design phase*, the design needs to be developed further including more extensive and diverse play scenarios, with diverse interaction possibilities. In the middle, you can still have multiple designs and you want to select the most

promising one. Or you have a very broad concept that you want to narrow down. At that point, the stages of interaction start playing a role. It supports examining diverse stages of interaction, and also possible shifts between different play experiences.

Then in a *later design stage*, the design can be further developed, by looking again at opportunities for further detailing, (or simplifying) the interaction opportunities. In the later phases, you make more detailed decisions e.g. fine-tuning interaction behaviour.

The Lenses of Play can be used in different ways, including for designing for play and for teaching how to design for play. These two cases are explained in the following two sections.

Case 1: Wobble

How the Lenses of Play are used throughout the design process.

This design case intends to show how the Lenses of Play were used to develop a digital play environment intended to stimulate fantasy play of young children (for more details about the design case, see Valk et al. 2015). The design of Wobble was made by Alice van de Beukering (then an Industrial Design master student). She developed Wobble by going through three user-centred design phases.

In the *early design phase*, the designer decided to focus on pretend and fantasy play (forms of play), and on the playful experiences of magic, surprise and fellowship (playful experiences). She decided to provide open-ended play opportunities through balls with light feedback and sounds (open-ended play).

In the *middle design phase* design explorations were made around different interaction scenarios. The overall focus on the forms of play stayed the same: fantasy play. To support improvisation in open-ended play, some concrete objects, e.g. ladybugs and butterflies, were added to Wobble (see Figure 4.5). The evaluations in the early phase showed Wobble was too abstract for children to start coming up with some game ideas. The interaction rules were also varied to explore how to enhance the playful experiences of exploration and curiosity.

In the *later design phase*, a decision was made to provide more handles for fantasy play in open-ended play context: e.g. provide graphical help on the balls because young children need more concrete pointers for fantasy play and more clear rules for stages of play. Furthermore, a new interaction rule was added about the balls changing colour if not touched for a while providing new opportunities for open-ended play.



Figure 7.10: Sequence of inner-outer exchange surrounding the play-punctum. It expresses enjoyment, clear direction of attention and focus displaying that relations exist between the observer, the expressive interaction and its creator. See details next section.

and multi-applicable design. He labelled them ‘gifts’, which is still in use today. His gifts activate the senses and allow various cognitive development exercises. He applied three tenets when he designed his gifts: unity, respect and play (Manning 2005), which are still relevant design principles (i.e. expressed within democratic design). Therefore, this play thing sets the constraint to design something that contains simplicity, is generic and multi-applicable. Figure 7.11 shows a quick overview of one possible application of the ViT-C process completed by the Design for Play Master students, whereas the How-to box to the right shows you the process in practical steps.

How-to – the Exact ViT-C Process

Design a gift to create hideouts

1. Decide upon a theme you want and have a picture of a design that resembles some features you would like to have in your idea.
2. Take photos of tangible moments of engagement at a playground or any other site
3. Choose one visible feature (i.e. structure, colour, combination of different materials) that is interesting to you.
4. Choose one tacit feature (i.e. surface-structure, material quality) that is interesting to you.
5. Distinguish the possible interactions/movements (i.e. drawing, scratching, stamping) and limbs involved (i.e. hands, fingers, nails etc.) causing the construction you photographed. Choose an interaction or a sequence of interactions that is interesting to you.
6. Sketch different ideas by a clustering and create a collage of photos. Then, design your idea that.
 - a) has the theme hide-outs, b) includes the 3 chosen aspects found in your photography, and c) is a gift similar to Fröbel.

build and code solutions to achieve their goal or idea. This is done with supervision and guidance from people within the field of technology, so it is driven by motivation and curiosity within a framed environment.

In the following sections, I present aspects and tools to consider when you want to increase your learner's motivation through playful activities. I will touch upon problem-based learning as a potential for facilitating play through teaching; safe spaces will be presented as it is both a prerequisite and an outcome when using play as a tool, and I will present aspects of play and design that relate to learning. Through these three parts, I aim to propose simple ways to increase motivation in educational situations.

One approach that I find to be useful to combine with play elements is *problem-based learning*, which provides ownership and exploration. Problem-based learning gives the learners the chance to really take their learning into own hands, by defining and working with a problem-based focus. The combination of using different tools and approaches tends to create a space where you as the teacher and the learners have more equal stakes in the learning. One way of doing this, as mentioned, is problem-based learning, where the learners are working on projects with topics and problems, through a given frame (by you). They get to choose

what they would like to work on within the frame, and through a structured and guided way, finding the information they need, process it appropriately and conclude on it, for example, by:

- Finding the information: Google, articles, books, interviews, observation or something sixth
- Processing the information: categorising, finding insights, doing analysis, etc.
- Conclude on it: prototyping, sketching, summarising, etc.

This takes elements from the design but in a simplified way. If you want to expand it further, I would suggest you have a look at a design model and the methods for that, e.g. double diamond or the 6C model (Friis 2016).

While doing problem-based learning, you could let your learners do presentations with peer input often through the process, use mindset activities, use play elements and then, of course, combine it with short lectures. What often happens (not always, and sometimes only for part of the process), is that the learners take ownership over their learning. I have even done whole classes based on two large and three or four smaller problem-based projects, with a maximum fifteen-minute lecture each time. My students have asked me 'when are we supposed to learn something?', they tend to associate the courses with something good: They do voluntary

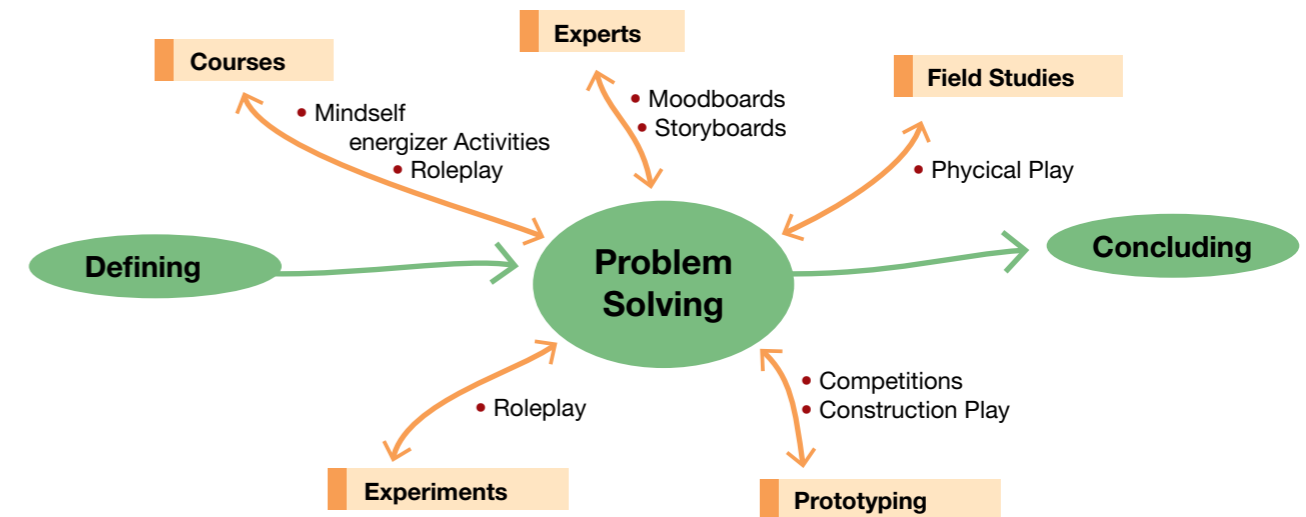


Figure 8.1: A combination of problem-based learning play elements

homework, they understand (most of) the material better, rates of practising and attendance are higher than the classes where I haven't dared to go through. The important points to take from this are that you need to define problem areas or topics that the learners can choose from and you then guide the learning process through their projects.

For example, I had a class that was hesitant towards databases and information technology, which were the topics we were going to cover. So, I gave them a challenge: Decide on a problem that you (in groups) would like to work on, with one of the following requirements in mind: creating a game, designing a webpage or making an app. They decided on different things, e.g. one group wanted to make a game that was based on safe sex (I think they were testing me on this one); one group wanted to make an app

that made laundry easier when moving away from your parents; another group wanted to create a website for a bakery that one from the group worked for. I then guided them through different tools available (the goal for me was never to create something complete and nice, but more for the learners to work with technology and databases in a more exploratory way). At some point, I did a fifteen-minute lecture on the possibilities of databases and gave them the challenge to incorporate a database to their solution in a meaningful way, which they did, with various success, but they all did it and put effort into it.

I guided them and chose when they were ready for the next challenge within the projects they were working on and then exploited that they had already invested time and thoughts in their projects when presenting something that the learners

‘empower to partake in democracy’ (see Figure 10.2, blue corner); however, this criterion was seriously challenged by the other group, which saw ‘what’s in it for me’ as the most important criterion for the citizen. Both groups began to question their own criteria.

From activities early on focusing on establishing design criteria, the participants can then move on to generate ideas and scenarios. In such a design stage, iterations on various scenarios, and consider pros and cons helps to evaluate these up against each other. For this purpose, I have used two different design thinking plays – Pinball customer flow and Domino value chain – that allow for a high

degree of open-ended scenario-making but also triggers new scenarios to appear outside of the radar of the participants, in order to propel them out of habitual thinking and status quo understanding of the world, and into imaginative modes where participants search for new scenarios and new meaning.

Pinball Customer Flow Example

Figure 10.4 depict how participants from a large Amusement park were discussing and building up in the pinball game scenarios down the ramp related to introducing a new digital bracelet as access point for visitors to know for instance cue time, best places to go in the park and similar way-finding challenges. In around 45 min they developed 3-4 different scenarios they can

Figure 10.4: Pinball customer flow example – amusement park

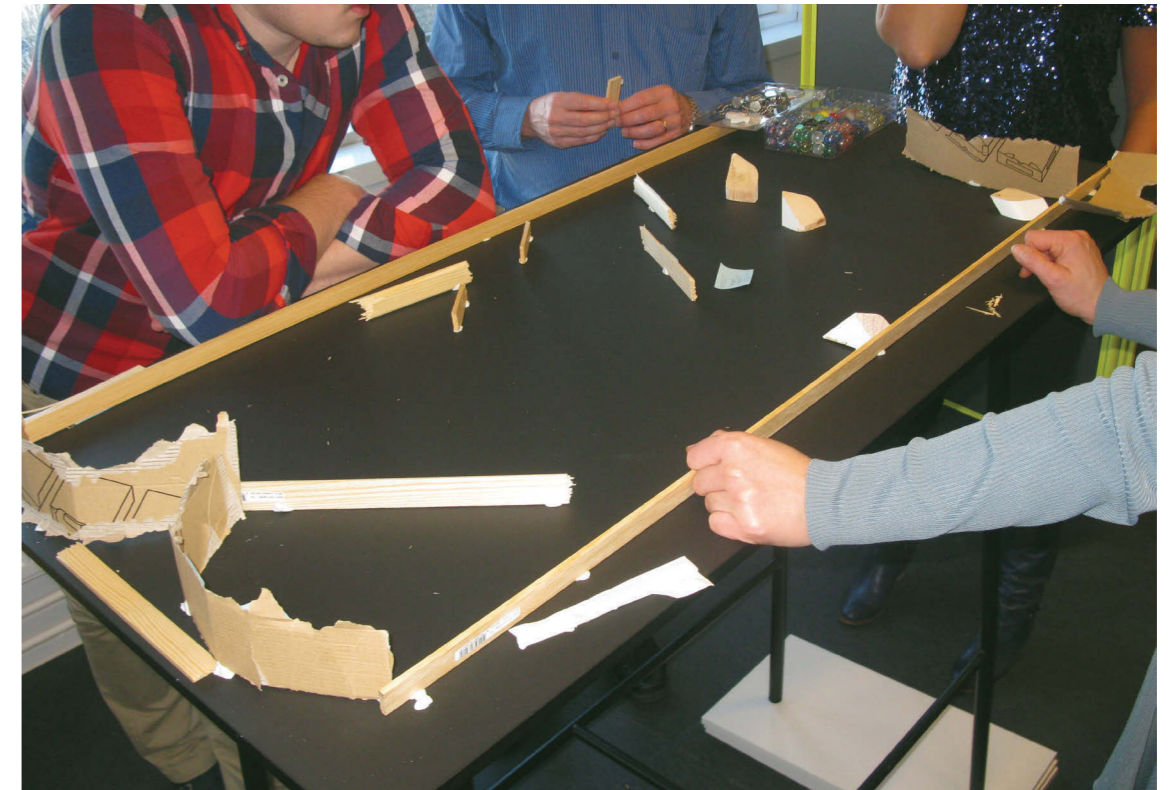
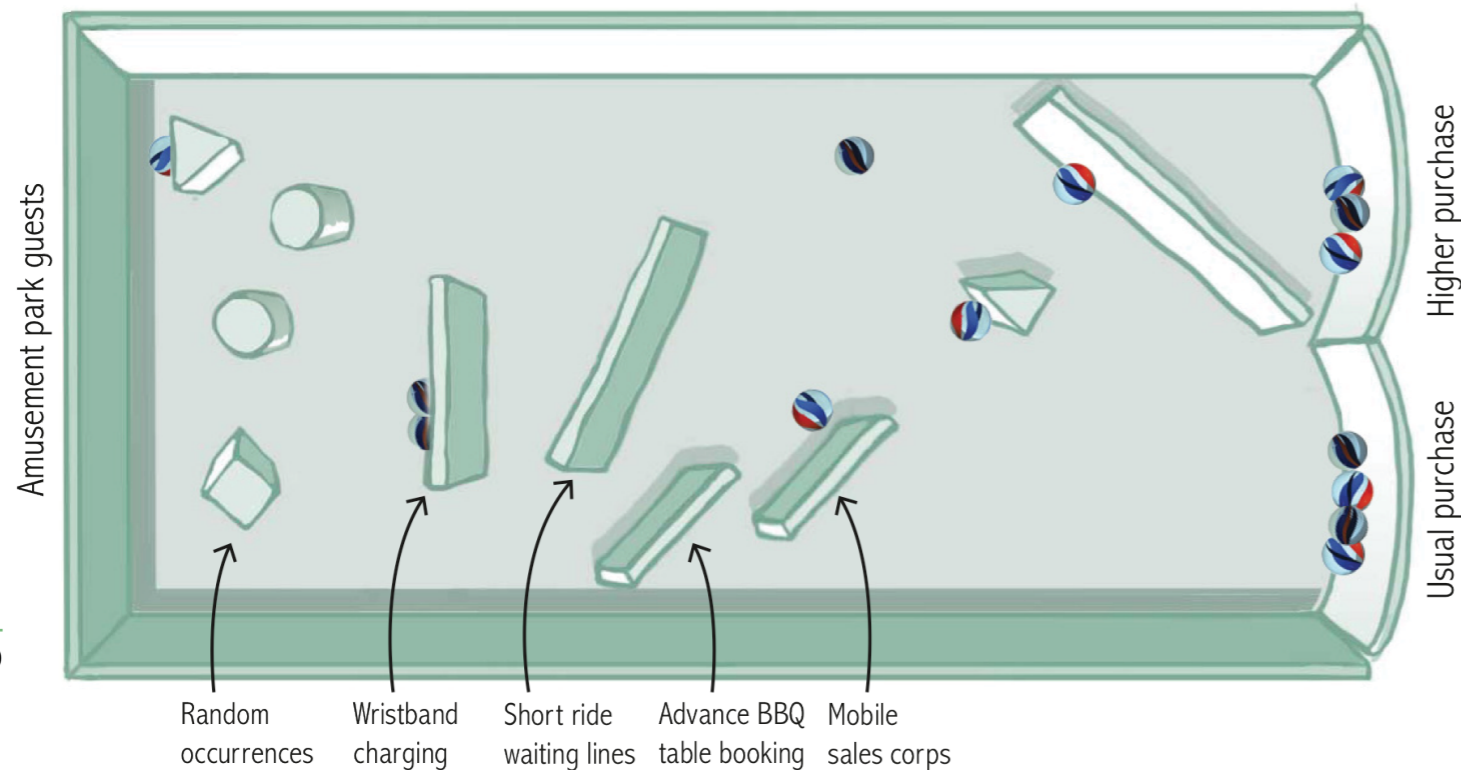


Figure 10.5: Pinball customer flow game – touchpoints and barriers being placed

then evaluate up against each other and decide on best part to work further with. The pinball game works both as a shared communication early prototype and a way to work through a specific concept with various scenarios in play. Often prototypes in design challenge assumptions by the very making of it, but in this case it is both the making part and the try-out of the balls – a double action, first you need to reach common understanding and then you have to act upon a randomizer incident.

Domino Value Chain Structuring

Another example is an activity we call Domino value chain, which has been ap-

plied in several situations with SME companies looking for new ways to structure their value chain and in a participatory setting challenge current structures and ideate on new ones. Like in the Pinball game participants create the domino content and place each value chain part as they understand the status quo. A dice roll challenges participants to take certain actions like switching around two random dominoes; removing a domino or adding in-between dominoes activating participants to think in new, potentially better structures.

The Pinball and Domino activities are simple but can have a surprisingly striking

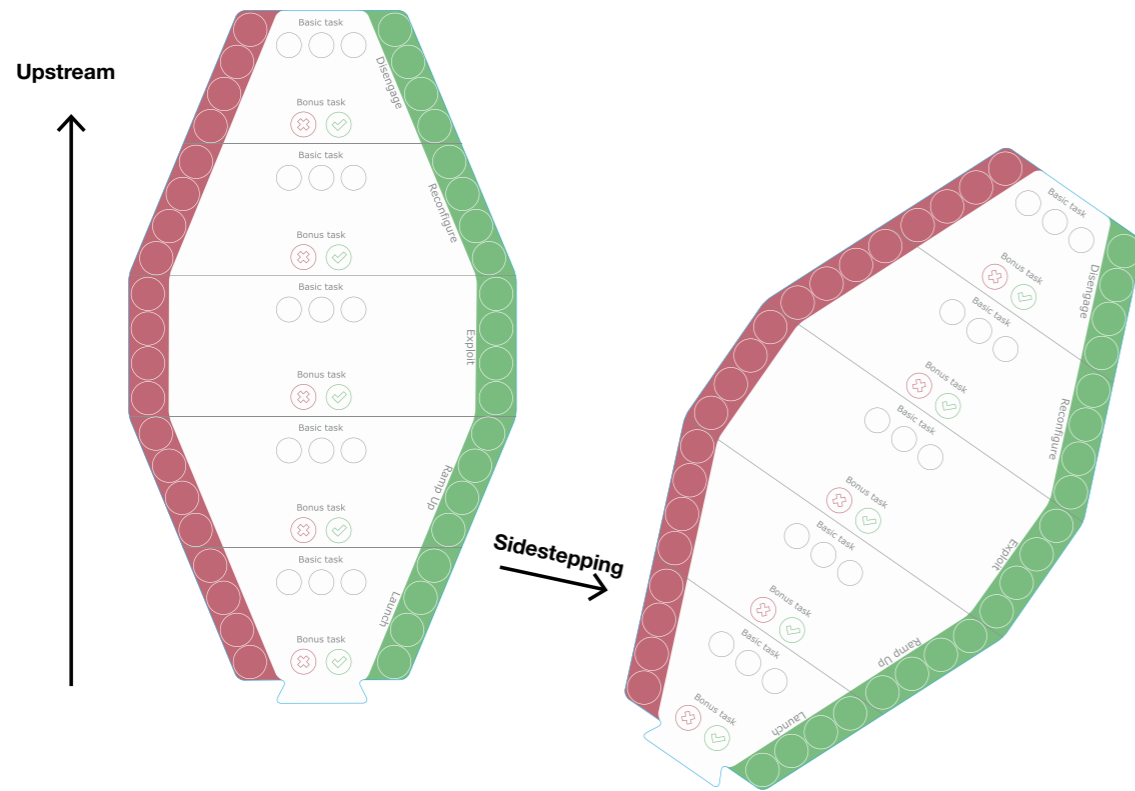


Figure 10.7: Pictures 1-2: Business model branching board & upstream/side-stepping principles

competencies, instantiations, and strategies are needed for each stage. Participants have basic tasks to fulfil and bonus tasks that provide extra resources and movements in subsequent rounds.

Sideways movement marks a transition from one branch to another. Here, the participants have to devise resources and also place people either in the red zone (in need of competence development) or in the green zone (ready to fulfil tasks). As McGrath (2013) mentions, ‘another factor in play in companies that can move from one set of advantages to another is that they consciously set out to educate and up-skill their people’.

The game lets groups of participants work with the basic tasks for minutes to hours based on the time available and then return to the board to discuss changes related to both the ‘why’ of the company as well as the specific balance between ongoing operations and innovation. Based on McGrath’s theory, Business model branching has a scoring algorithm that pressures participants to launch new branches before old branches die out or else they face the same destiny as companies in the real market – going bankrupt. This helps participants look further into their future than their current business branches, while also letting them see that they shouldn’t launch new initiatives all the time. It strikes the balance between being overly enamoured with existing value proposi-

tions to launch something new launching too many new value propositions without having the necessary resources and the right competencies in place.

Marketing and Promotion Company Case

In a case clearly illustrating the paradox between ongoing operations and innovation, we worked with a company that had years of success on their existing value proposition based on promotion and marketing. Now, they experienced the first declines and signs that reconfiguration and disengagement were not that far away, but they also found that maybe a scaling up on an existing business branch might lead to better times.

Based on this initial mapping of Business Branching, the team had identified existing value propositions and new potential business branches. Subsequently, the team was divided into two groups. One group focused on an existing business branch and how to scale this in fierce competition (upstream movement on the existing branch). The other group focused on a new value proposition of ‘outdoor promotion events’ (sidestep movement to a new branch). The groups went through a series of idea generation activities to further unfold the potential of each branch and then returned to discuss what these potential moves would mean for status quo practices in the company.

Framing Play Design

A Hands-on Guide for Designers, Learners & Innovators

Play has for some decades and in many circles been shelved as outside of learning spheres and only meant for children until a certain age. What can be observed now is a revival of the phenomenal characteristics and potentials found in strong play experiences across life-long learning target groups and applied situations as well as broadly in the product, service and experience industry. The effect play can have on participants and surroundings can be extremely effective. This book provides operational design guidelines on how to find strong balances in the making of specific play-based designs as well as how to involve users and stakeholders in the process of play design making. Furthermore, it provides frameworks and theories at a more operational level, that can guide those interested in designing for particular play experiences at a hands-on level.

“The compilation of examples illustrates how uniquely important play is in the 21st century; not only as a process, which is apparently different from everyday life, but as an approach which shapes the interactions and environments of our future lives. These insights bring together the multiple theories behind play and design, and describes the ingredients and core understanding, in order to equip designers, innovators, facilitators, students and researchers with a refreshing framework for Play Design.”

Bo Stjerne Thomsen, PhD, Vice-President
and Chair of Learning through Play,
The LEGO Foundation

B/SPUBLISHERS

