

Introduction to (participatory) design games

This article gives an introduction to (participatory) design games in three rounds. Firstly it argues that designing design games is a particular and very productive genre for formatting participation and design dialogues. Secondly it presents some of the main contributions to the development of design games in a historical perspective, and thirdly it introduces three recent PhD dissertations that all in very different ways have investigated design games in more detail.

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Introduction

In his book 'Humo Ludens' the Dutch historian and cultural theorist Johan Huizinga argues that: 'Play is older than culture, for culture, however inadequately defined, always presupposes human society, and animals have not waited for man to teach them their playing' (Huizinga, 1949). However, as I have argued elsewhere what seems in favor of using the game metaphor in relation to participatory design is that everyone 'hold concepts and have experiences with game playing. Most of us have played games like Monopoly, Chess or various family card games [...] In work fields like economics, simulation and gaming based on statistics and probability are also widely used. Some games have similarities to real life and are a means for learning or sparking creativity, whereas other games are for amusement or a way to socialize with other people. In general game playing is not restricted to a specific age or social status' (Brandt, 2011, p. 215).

When the subject is games it is important to mention Salen and Zimmerman's comprehensive book named 'Rules of play: game design fundamentals' (2004), which aims to formalize the field of game design. Salen and Zimmerman begin the book by citing and dissecting eight different authors game definitions. When comparing these they conclude that all authors except one include rules as a key component. Most of the authors also include goals as an important game element, but besides this there seem to be no consensus at all. Salen and Zimmerman state that probably the reason for this is that 'each author defines games for particular reasons within specific contexts' (ibid. p. 79), which is an indication of the difficulties in describing games in general. In relation to participatory design games it seems important that the game world including the game materials, and the rules for how to

play, contain some kind of 'dream material' that opens up a make-believe world where the outcome of game playing is unknown at the outset. (Brandt, 2011).

Design games as a way of formatting participation

The essence of designing is to envision possible futures. Today the 'designer' can no longer be perceived as the outstanding creative individual bringing artifacts into the world, but rather a member of a collaborative design team that engages in ongoing dialogues with clients and users, manufactures and consumers (Binder & Hellström, 2005). Thus designing is a social process where communication and negotiation is at the core of the work. For instance Bucciarelli (1994), Habraken & Gross (1987), and Horgen et al. (1999) all emphasize that designing the design process itself is just as important as designing 'the artifact'. Even though organising participation is one of the cornerstones of designing it is not commonplace. When it comes to planning design projects, organizing and staging design activities there is not such thing as 'one size fits all'.

In this article there is focus on design games as part of a Participatory Design practice where the direct involvement of the people for whom we design is essential. The Participatory Design field has existed for

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about forty years and covers many different approaches, methods and techniques for how to engage people outside the traditional design team in design projects (see e.g. Brandt et al., 2013, Schuler & Namioka, 1993, or Greenbaum & Kyng, 1991).

Fundamentally design games are a methodological perspective on participation in participatory design. People having various expertise and competencies are involved in the design process in order to develop new knowledge through exploring together. They are engaged in collaborative inquiry into existing practice and participatory design of 'possible futures'. Designing 'possible futures' can take many different forms, for example, a tangible or intangible and immaterial nature as often referred to as 'products' or services. Products here can refer to designing physical spaces indoors and/or outdoors, public or private. It could be designing a plan for a product, structure, system or component, but also the product, structure, system or components themselves.

We have earlier argued that the 'game format is the means for structuring and organizing the collaborative and exploratory design work. The nature of successful exploratory design games is that they are engaging and fun. In a playful way exploratory design games set an agenda for collaborative design work and assist the players in for instance creating common visions for the future. Therefore creating and playing exploratory design games is a way to stage, organize and facilitate multi-disciplinary design work involving many people with various fields of expertise, interests and responsibilities' (e.g. Brandt, 2011, p. 214).

Participation through participatory design games is based on a conversational design practice. The notion is borrowed from Schön (1983) who describes problem solving as a conversation with the materials of the situation. Schön argues that problem solving is an iterative process of naming, framing, re-naming, and re-framing the problem as the designer gains new insight. He claims that it is necessary to step into the problematic situation and make a design move by imposing a frame on it. Then one has to follow the implications of the move and yet remain open to backtalk from the situation. The back-talk gives rise to re-naming and re-framing the problem and the meaning of new design moves etc.

In relation to participatory design games, designing the game and creating the rules and games materials is a way to both name the problem and framing the context within which the participants are to deal with the situation. Game playing is a process of making design moves, listening and reacting to the backtalk both from the game materials themselves and the

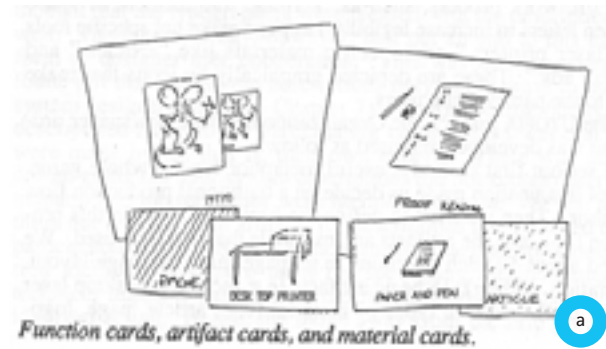


Figure 1. (a) Function cards, artifact cards and material cards in the Organizational Kit Game; (b) Designers and users play the Organisational Kit Game; (c) Production design using the Layout Kit Game. All images are from the work by Ehn and Sjögren, 1991. Some years later in the US Muller and colleagues used games as a common denominator for a group of constructive participatory techniques such as PICTIVE (Muller, 1991) and CARD (Tudor et al., 1993; Muller, 2001), that also aimed at task analysis and understanding workflow. The common purpose was that the design games worked as means for the design researchers to understand work practice.

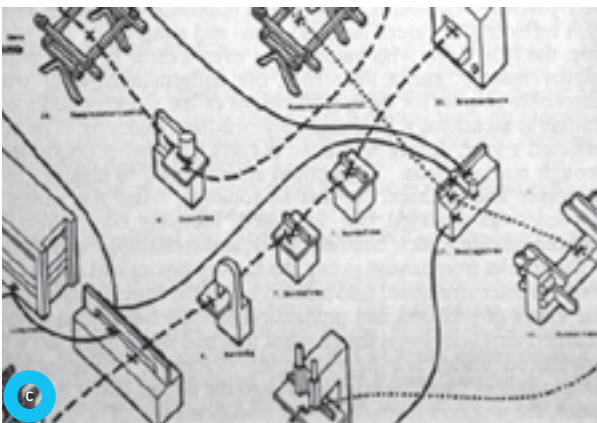
people taking part in the game. Thus both the game and the game players affect progression. What each player brings to the game depends on training, skills, competences and experiences, but also interests, attitude and perhaps position.

Design games in an historical perspective

Since the 1980s several design researchers have worked with design games for different purposes. There is no space here for a chronological and satisfactory account of how the field has developed. Instead I will touch upon some of the main contributions that have inspired and affected our research journey.

Within the Scandinavian field of participatory design the work by Pelle Ehn (1988) is above all an essential a cornerstone. Ehn was one of the first to take up the challenges of communicating across professional boundaries both theoretically and practically. From a philosophical point of view Ehn used Wittgenstein's notion of 'meetings of language-games' as a way of highlighting important aspects that designers needed to be aware of. Wittgenstein defines the notion of language-games as constituting human practice, and describes language as consisting of many different language games used in various settings (Wittgenstein, 1953). Thus Ehn (1988) recommends game playing as a good frame for mutual learning between designers and users. In line with Ehn I will argue that depending on how the games are designed and played they can help designers, users and other stakeholders to translate back and forth between their respective worlds (language-games). Thus participatory design games can be used to create a common (play) ground for people with various interests and competencies, and coming from various practices.

Dossier Design games



Ehn and his colleagues first began developing design approaches aiming at making system design more participatory and democratic. They soon argued for prototyping and design games as the most promising approaches for empowering users in design processes (Ehn & Kyng, 1991; Ehn & Sjögren, 1991). Their games, at the time, typically explored existing use of technology and other artifacts and hence the boundaries between various employees work tasks.

Probably the most acknowledged pioneering work is by Ehn and Sjögren (1991). The guiding principles were that they should be easy to work with, the design games should be cheap to produce and play with, they should be flexible and facilitate the exploration of several alternatives. For instance in the UTOPIA project they created the Organisational Kit Game for people involved in newspaper production; a simple board game with drawings on pieces of paper illustrated various work tools and a layout of the production facilities was used to create a common understanding of the current organization, workflow and various work tasks (see examples in figure 1). In the second part of the game they discussed suggestions for organizational change or development activities (Ehn & Sjögren, 1991).

The work by Habraken and Gross (1987) is another important source of inspiration. They developed and

had designers playing design games for other reasons. Habraken and Gross used games as a tool for research. They used games in order to study how designers 'manipulate and transform complex configurations, while making agreements and rules as to how to go about their work' (ibid., book 2, p. 1-2). Purposefully neither game pieces nor the game-boards referred to any real-life artifact. They wanted all the players to have the same starting conditions when entering the game, which is very different from the scope of the games played within the participatory design field.

In 1991 Bucciarelli (2005) created the 'Delta Design Game', which was also a board game using stylized game materials (see figure 2b), but with a very different objective. The aim was to teach engineering design students about social processes in engineering work practice. In the Delta Design Game the players have different roles (a project manager, an architect, a structural engineer and a thermal engineer). They have to study a script beforehand that includes instrumental methods, and attributes, which belongs to his or her object world. By playing the game the students experienced that an important part of development processes involve communication, negotiation and entering compromises (Bucciarelli, 1994).

Viewed from a participatory design perspective neither of the games by Habraken and Gross and by Bucciarelli involves people for whom we design. Still they have inspired many other peoples work. It is very interesting how they have succeeded in creating abstract and stylized game universes, from which it is possible to learn about design practice. It is impressive how a combination of game rules and relatively simple materials used in a game format can bring about new insight.

In recent years the use of different design games in design projects has become more widespread. For instance Buur and Soendergaard (2000) have created the Video Card Game aiming at making analysis of problems and possibilities through user studies. Horgen et al. (1999) have used games as part of the initial specification of an architectural design program involving people for whom they design, and Brandt and Messeter and colleagues (2004) have been focusing on using games to create a broader mapping of the potential design space by having the design team play exploratory design games in mixed groups with potential users, and representatives from various companies. All the examples just mentioned include different kinds of board games and they can be seen to draw on the work by Habraken and Gross. However, one difference is that the games mentioned are used in real design projects, and therefore their aims in general are to utilize the knowledge brought in by the various



Figure 2a. Ph.D. students playing the Silent game by Habraken and Gross (1987) during a Ph.D. workshop in Denmark, 2006

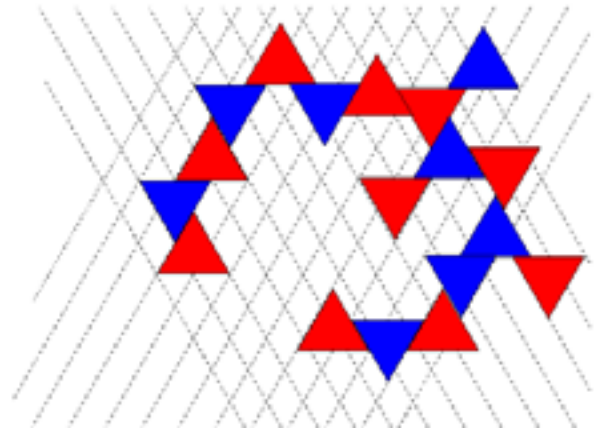


Figure 2b. Image of the game board and blue and red game pieces from the Delta Design Game by Bucciarelli (2005)

players in favor of focusing on ecological validity (Brandt et al., 2008).

The design games in the examples have been used as a means for initial staging of a design program, empowerment of future users, inquiry into problems and possibilities in user studies, a vehicle for understanding design actions, and learning engineering students social skills like how to communicate and negotiate as part of design projects.

Resent PhD dissertations on design games

With this last section I want the reader to pay attention to three interesting PhD dissertations that all address design games and have recently been defended. They have three very different takes on the subject matter. Julia A. Garde's dissertation 'Everyone has a part to play: Games and participatory design in healthcare' (2013) is rare for at least two reasons. First of all Garde has been in the fortunate position to be co-leading and taking responsibility of a large 'real life' research project, SWING. During a period of two years more than 13 workshops have been carried through with the aim of redesigning the nurses work practices in relation to the building of a new major Dutch hospital. The second project, which was much smaller in scale, was about designing a mobile hospital for disaster situations and included two workshops. In both projects Garde has continuously been working with the same design game; the HEAD (Healthcare Environment & Activity Design) game, that she has specifically been developing to be used within health care. The overall research aim was to analyse the HEAD game's 'usability and ability to empower the development of design solutions' (Garde, 2013, p. vi). As something which is seldom seen within research in the participatory design field Garde tries to combine a quantitative and qualitative analysis of the outcome of using the game in various workshops based on an evaluation of the quality of ideas and concepts

that was generated and the participant's individual views on the outcome and value of the process.

The title of Mette Agger Eriksen's dissertation (2012) is: 'Material matters in co-designing – Formatting & staging with participating materials in co-design projects, events & situations'. As can be seen from the title Eriksen does not solely focus on design games, but on the role of materials in a much broader sense in relation to codesigning. Eriksen reports from more than 10 years of research work spanning from taking part in several EU-funded projects to teaching design students. As opposed to Garde, Eriksen's research emphasis is not on evaluating the outcome of various codesign events but to get of through understanding of what roles that materials play in various events, 'in situated practices of collaborative doing' (Eriksen, 2012, p. 25), and what the materials of the co-designer are. Among others Eriksen's research is very much inspired by Bruno Latour's work on Actor Network Theory and the notion of 'drawing things together' in understanding the complex networks of today instead of simplifying and pulling things/networks apart' (Latour, 1986/2008, in Eriksen, 2012, p. 31). Most recently Eriksen has, together with colleagues, analysed specific situations in more detail in a design game called Urban Transistion. Here focus is on understanding situated power relations of people and materials in game playing situations within a specific participatory design project (Eriksen et al., 2014).

Kirsikka Vaajakallio from Finland has written the last PhD thesis that I want to draw attention to. The title is: 'Design games as a tool, a mindset and a structure' (Vaajakallio, 2012). The theoretical grounding is combining co-design with studies on games, play and performance. Vaajakallio's main contribution is what she calls a 'play-framework', that instead of looking for the special characteristics in design games by

comparing these in a material way by e.g. comparing rules, game boards and game pieces she suggests looking closely at 'what the action employs at the mental level' (Vaajakallio, 2012 p. 218). The play-framework present three different perspectives on games depending on the practical application context and the roles that people have in the design process. Vaajakallio writes: 'For the product or service designer, design games are seen as a tool 'for addressing the three levels of co-design: Organising dialogue, supporting empathic understanding and gaining several contributions in order to identify, frame and solve design problems. For the players, design games appear as a mindset that creates an experience of being in a special game world, a magic circle, which is a physical and ideal playground with a special ordering of time, roles and rules that are not bound by the laws of ordinary life. For the design game designer, design games are a structure with tangible design game materials, explicit rules or fixed elements, and performance roles that can be manipulated depending on contextual needs' (ibid., p. 219).

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