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**TEACHING CO-DESIGN GAMES IN FIVE WEEKS**  
**- EXPLORING DIVERSITY AND UNITY**  
**FOR A DESIGN SCHOOL IN TRANSITION**

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**ABSTRACT**

This paper is about educating designers as co-designers and reflective practitioners. It is argued that an important goal in design pedagogy is learning the students' strategies and tools for how to involve various stakeholders in designing, and how to deal with uncertainty and open design agendas. It is important in order to prepare students for a career as designers. The paper reports from an intense five weeks course about developing and using design games as a frame for design-oriented collaborations with people outside the core design team. Co-design is about making room for people with diverse interests, roles and responsibilities in rehearsing the future. Using the game metaphor to stage and engage everyone is a valuable format for collaborative inquiry and co-creating future visions - in other words exploring diversity and creating unity about values and goals. The professional designer is the one to organize co-design events that can accommodate common learning through inquiry and design. Developing and playing design games is a valuable format for co-designing and therefore a good example of what could take place during a specific design event. Hence they can be very useful in design education.

**Keywords:** Design education, co-design, design games.

**INTRODUCTION**

Design and designing are fascinating but also difficult to teach. What is fascinating is that design projects can be carried out and solutions can be achieved in many different ways. There is no clear path to be followed from A to B. The design process is full of uncertainty but in order to progress, choices need to

be made and argued along the way. As stressed by Schön (1987), "Teaching within the realm of technical rationality is not enough. That which is to be designed is not given in the outset but is something that needs to be named and framed, re-named and re-framed as the project proceeds and new knowledge is obtained" (Schön, 1983). Many have argued that designing is a social process, which involves communication and negotiation (see for instance, Bucciarelli, 1994; Habraken et al., 1987; Horgen et al., 1999). They emphasize that designing the design process itself is just as important as designing the artifact. As teachers at educational design institutions, we need to address what skills and competencies we want to be developed through our teaching and how to do this in practice.

In relation to the engineering design curriculum, Dym et al. (2005) have made a thorough review of the history and role of design thinking including "why design is hard to learn and harder still to teach" (ibid. p. 103). One of their main points is that designers need skills that help them cope with complexity, and that this includes, for instance, "reasoning about uncertainty," "conducting experiments," "making design decisions," and "design thinking in a team environment."

Project-based learning (PBL) is highlighted as the most-favored pedagogical model for teaching design as it is viewed "as one of the more effective ways for students to learn design by experiencing design as active participants" (ibid. p. 104). PBL originated and is widely used within medical education, but has been used in other fields as well. In general, it is a pedagogical style that bridges abstract theoretical material with more "familiar" everyday situations. In relation to design education, the point is to learn

through reflecting on experiences by applying theories on, for instance, design thinking, design approaches, methods and techniques in specific design projects. It is important that design students get experiences with ill-defined, ill-structured and open-ended problems (Rittel & Webber, 1973), which mirror real world work contexts.

This paper concerns educating students as co-designers and reflective practitioners. Framing and staging co-design activities is about giving room for people with diverse interests, roles and responsibilities to participate actively in the design process. In general, the process and activities can be described as finding ways to jointly rehearse the future (Halse et al., 2010). Using the game metaphor in co-design is a valuable format for collaborative inquiry and co-creating future visions (Brandt et al., 2008). Here, the professional designer has the important role as the one to stage what could be called a collaborative “design laboratory” organized as a series of co-design events that can accommodate common learning through inquiry and design (Binder & Brandt, 2008). Working with design games is a good example of what could take place during a specific design event.

In the following section, we will go into more detail with the content of the design course, give examples of game play and how reflections on the experiences from game playing changed the resulting games. The paper finishes with a discussion.

## A COURSE ON EXPLORATORY DESIGN GAMES

In 2003, the Ministry of Cultural Affairs decided that the Danish Design School (DKDS) should change the curriculum and strive to achieve status as a higher educational institution (status as a university). As something new, the school should conduct research and part of the classes offered should be research based. In the end of 2010, after eight years, DKDS received accreditation as a school of higher education.

Today the teaching at DKDS is divided into modules lasting between one and ten weeks, in which the students work full time on the subject matter.

We report from an intense five week module in which exploratory design games were used as a frame for design-oriented collaborations with people outside the core design team. The first part of the course was organized as a mixture of reading literature (400 pages), lectures and hands-on experiences from playing other people’s design games. Based on this, the students designed their own games in groups and arranged two workshops in which people outside the course played the design games. Each workshop was documented by videos and photographs, which were analyzed and reflected upon subsequently. The games were altered based on the learnings from the first workshop, and played with new people during the second workshop. The class was finalized by a written report reflecting on learnings and experiences. The present paper is partly based on three students’ report; these students are co-authors of this paper.

The following is a short introduction to the main part of the literature used in the class. Initially, the Dutch historian John Huizinga (1949), in his book “Homo Ludens” explored the concept of play. The focus of his book was the role of play in human civilization. Huizinga stresses that playing is not only something we do for the fun it; there is more to it. He lists different hypotheses given to define the function and purpose of play, and concludes, “All these hypotheses have one thing in common: they all start from the assumption that play must serve something which is not play” (Huizinga, 1949, p. 2). Hereby, Huizinga stresses that play, as an unserious activity can be understood as a means to achieve serious goals or skills that life demands.

Within the design field, Habraken and Gross suggest that games and play can be used as a tool for research into how designers work, in order to better understand design actions (Habraken & Gross, 1988). They argue that “Designing is a social activity that takes place among people who negotiate, make proposals, set rules for their conduct and for the work to be done, and follow such rules” (Habraken & Gross, 1988, p. 150). Habraken and Gross hereby suggest that design processes hold many similarities to board games, and that the game metaphor is

appropriate, to simplify the complexity of design processes and actions.

As opposed to Habraken and Gross, Ehn and Sjögren use games as a design tool (not a research tool). They treat design work as play. Ehn and Sjögren stress that design processes can benefit from involving users and stakeholders in the design process. They argue that a participatory design approach can generate a mutual learning process between professional designers and skilled users (Ehn & Sjögren, 1991). Iversen and Buur use design games for an educational purpose. They use design games as a way of building design competences for design students as well as for professional practitioners (Iversen & Buur, 2002). They argue that design games can be useful in order to explore design moves and strategies in a reflective setting. By playing design games, design students can enter “as-if worlds,” which design games can represent, to try out their design concepts, in order to better understand their design moves.

Brandt et al. (2008) “propose the following features as comprising a tentative definition of participatory design games.

- A diverse group of players is gathered around a collaborative activity guided by simple and explicit rules and assigned roles and is supported by pre-defined gaming materials.
- The game materials typically point to either or both existing practices and future possibilities.
- The games are played within a confined and shared temporal and spatial setting often removed from the everyday context of the players.
- The purpose of the game is to establish and explore novel configurations of the game materials and the present and future practices to which these materials point.
- At the end of the game, the players will have produced representations of one or more possible design options” (ibid. p. 54).

As hands-on exercises in the beginning of the class, the students played the “Silent Game” (Habraken &

Gross, 1988), the “User Game” and the “Landscape Game” (Brandt et al., 2008). The students reflected in common on both literature and their own game-playing experiences and used this as the basis for developing their own design games. The students came from different lines of specialization and had various interests in relation to designing. As they had to work in groups when designing their own game, it was necessary to find a common topic that they wanted to explore further by inviting people to play their games. They chose to focus on the present situation at the Danish Design School.

#### *EXPLORING DIVERSITY AND UNITY FOR A DESIGN SCHOOL IN TRANSITION*

At the end of 2009, when the class took place, the Ministry of Cultural Affairs had recently decided that The Danish Design School (DKDS) and The Royal Danish Academy of Fine Arts, School of Architecture (KARCH) were going to merge in 2012. At both schools and in the news media there has been a lot of debate about this merger. In general, there is a lot of uncertainty about how the merger will affect the design education and everyday practices at DKDS. Consequently, as the overall framing of their design games, the students decided to develop design games that facilitated a structured dialogue about the concerns and challenges, in order to define values and explore visions in relation to the merger seen from the Danish Design School’s point of view.

Field studies were carried out in order to contextualize the games. The Merger Game was mainly based on quotes picked from interviews with students, teachers, people from the administration and workshop assistants. They were used as starting points for dialogues about hopes and concerns. The game materials for the Dream School Game were primarily based on photographs of everyday situations at DKDS and supported dialogues about the present and future school. The game players were representatives of the different users of the school: students, teachers, people from the administration and caretakers. The following examples show how the students reflected and learned from the game-playing sessions.

Sarasiff Kjærgård, Gudrun Risak Schou and Martin Vallin write: We had two game sessions in one week with one day in between to analyze and adjust the games. The sessions took place during the lunch break. By this, we hoped that we could attract more people, but it also gave us a very limited time frame of approximately 45 minutes for introduction and game playing. In both sessions we gathered enough people to have two groups playing in parallel. We played each game with one group, analyzed and adjusted it accordingly and then played the altered game with a new group of people. This way we could adjust the game rules or the game pieces, but it also made it possible to learn by trying out different approaches. In both games we started out with an initial set of rules made up in our heads. However, when playing the games, we quickly realized that some of the rules seemed to disturb the flow in the dialogue or didn't make much sense and could therefore usefully be amended. In the situation we also experienced ourselves discard and develop the rules while playing the games.

## EXPERIENCES FROM GAME PLAYING

### *THE FIRST WORKSHOP: THE MERGER GAME*

Tuesday we played the Merger Game for the first time. The participants were three students (Tobias, Grit, and Marie), an external lecturer (Trine) and an employee from the school's administration (Eva). On the table there were small pieces of paper with quotes from students and staff at DKDS.

The rules of the game were as follows. The first player chooses a quote based on interest, and reads it out loud to the group. Together they have to find as many arguments as possible for or against the quote and note them down on a piece of paper in two columns, one for pros and one for cons. Subsequently, the next player chooses a quote and the procedure described above is followed until all participants have selected a quote. Finally, the participants were to prioritize the arguments and choose which ones are most important. They were to pick a maximum of five arguments, underline them and prioritize them from one to five, starting with number one as the most important argument. The one who picked the quote was also the one respon-

sible for taking notes while the group was discussing the quote. The game materials included twelve quotes on individual pieces of paper, pens and additional blank paper (see figure 1).



Figure 1: The game materials in the Merger Game consisted of 12 quotes taken from interviews with students and staff. In mixed groups, the game was played during a lunch break.

There was only time for three of the players to pick a quote. The quotes that were selected were the following:

- "There is no use for workshops" (picked by Tobias, student).
- "The best thing about our school is the freedom with responsibility" (picked by Eva, school administration).
- "We are an arts and crafts school and not an architecture school" (picked by Grit, student).

In the following text a few examples are given to give an impression of the discussions that took place.

### *THEORY AND PRACTICE AT DKDS*

Since 2003, academic ways of working have been emphasized more and more in the design education as DKDS has been changing the curriculum continually in order to obtain the accreditation. Consequently, an ongoing discussion at DKDS has been the balance between "reading and writing" and vocational education. Following the history of DKDS vocational education in crafts and design, mainly practiced in various workshops, has been the primary teaching style. In the various workshops, the students can for instance explore their ideas building "mock-ups," or prototypes or more generally

experimenting with the materials at hand. In everyday language at DKDS, the topic is typically described and discussed as “theory” vs “practice” or “design theory” vs “design projects.” We are aware that this of course is not a question of *either or*.

The following quote triggered the discussion of the balance between theory and practice at DKDS: “There is no use for workshops” (student from the KARCH).

As Schön (1983) describes the design process as very dependent on the designer’s conversation with the material and therefore, the thought, represented by the selected quote, of having no workshops at all was very provoking for many people. During the discussion in the group, all participants agreed that having access to workshops was important for the design process since working with the material provides you with unexpected inspiration.

For instance the participants said:

Marie: “I think it is important to have a feeling for the material, and use that in the design process; sometime it gives you things you didn’t anticipate.”

Trine: “Like you say, you get something from the material you didn’t expect beforehand.”

Marie: “Something you couldn’t find just through sketching.”

Eva: “Isn’t that something about getting inspiration during the process, suddenly standing there with a piece of wood or fabric in your hand and realizing, *I could also do it this way*, something you wouldn’t think of by drawing?”

As seen in the above dialogue, the participants consider the “back-talk” (Schön, 1983) you get when sketching on paper as different from when you sketch in other kinds of materials. The participants argue how they see working in the workshops engaging with the materials as an important part of the design process, not least the generation of ideas. They also stress that it is important to have knowledge of the material, which you can only accomplish while working with it. Later they argue that there is knowledge that you can’t obtain through reading “theory,” only through physical engagement with specific materials. They also

discuss how it seems that having more focus on the practice, the craft, is perceived as less prestigious than having more focus on the theoretical parts of the education. They wonder why this is so. Suddenly Eva from the administration says:

Eva: “Few people would like to be operated on by a surgeon who learned to remove your appendix by reading a piece of paper (...) No one questions the fact that studying medicine is an academic study, even though they also have workshops....”

By highlighting that both studying medicine and studying to become a designer include practicing skills in workshops, Eva seems to both support the students in that there are valuable learnings that can be achieved through experimenting in the workshops, and that they need not downgrade this way of working.

#### **THE MULTIPLE IDENTITIES OF DKDS**

The approaching merger has evoked a lot of questions about the identity of the design school. Now that we, staff and students at DKDS, are going to merge with a much bigger architectural school with a very long tradition, we compare ourselves with them and ask many questions about what our identity is compared to theirs. An important question is: How are we different and how are we similar? The present design school is the result of many reforms and mergers during the last 150 years. The school used to be a school based on arts and crafts but what are we now? The following quote triggered a discussion about DKDS’s identity: “We are an arts and crafts school and not an architecture school” (student from DKDS).

The group immediately agrees that DKDS is not a school of architecture, but are we still a school based on arts and crafts? After a few minutes they agree that DKDS used to be a school based mainly on arts and crafts but no longer is. Consequently, they compare KARCH and DKDS and go into discussing the differences. For instance, they say:

Grit: “They (KARCH) are defined because they have a very long tradition. And because we are a school of many design trades, it’s hard for us to unite against the ‘big’ school.”

Marie: "Design is a broad field and the work opportunities are plenty; therefore it's also a strength to have this diversity."

Later they say:

*Tobias: "We have several identities at the same time."*

*Marie: "The diversity and freedom we get here at the school are a great framework."*

*Grit: "But it can be hard to define yourself as a designer within that framework."*

One of the things that make KARCH and DKDS different according to the evoked group discussion, is that KARCH, because of its long tradition within architecture, has a more well-defined and strong identity, whereas DKDS offers many different specializations and therefore has a much wider scope. The group recognizes that DKDS' identity is composed of many different identities and that the multiple identities at the same time are a strength and a weakness. An important strength is that it makes the school, the staff and the students very flexible in terms of the use of various materials and media to give form. It can be a weakness because the unity is missing (or is difficult to describe with one or two words), which can make it difficult to define what we are. There seems to be a schism between acknowledging diversity for the school as a whole and finding an identity as an individual designer.

#### **DISCUSSION OF THE FIRST MERGER GAME**

Playing the game, we quickly realized which rules made sense and which didn't. Having the participants choose among the different quotes evoked a lot of reflection, negotiation and dialogue and was a fruitful action in itself. However, observing game playing, we quickly realized that it seemed an arbitrary action to list arguments as pros and cons. When reminding them about this rule it seemed more of an obstacle than a help as it interrupted the flow in the dialogue.

This is an interesting example of an idea that seemed good "in theory" when designing the game, but when it came to playing the game in practice it seemed to interrupt more than it provided new

insights. On the other hand, we also noticed that it invited the participants to take on other perspectives, for instance "What if you had to say something positive about not having any workshops?" which seems to result in more nuances to the discussion. In post-reflection, another reason for abandoning this rule might also be that as game facilitator it was unpleasant to keep reminding the other players that they should find both pros and cons. It felt like interrupting a good discussion. Still we do acknowledge that it is the role of the facilitator. The point is that issues like this might be important to be aware of when facilitating future game playing or other kinds of co-design sessions.

Another rule that during game playing we decided not to follow was the part that concerned prioritizing the arguments. Instead we had a final discussion in which the facilitator, Sarasiff, wrote down the most important points that the players agreed upon through a final negotiation. In figure 2, one can see the resulting summary.

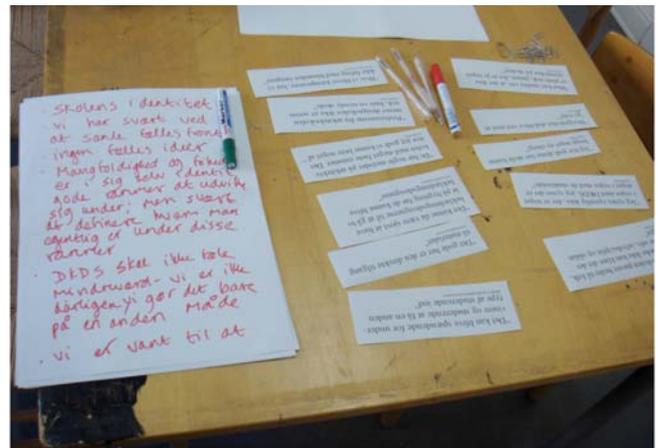


Figure 2: A summary of the main points elicited during playing the Merger Game, and written by the facilitator at the end of the game.

Another thing we discussed when evaluating the first round with the Merger Game was the gap between the many things that was said while discussing the quotes and what was documented on paper. As mentioned earlier, the person picking the quote was responsible for taking notes during the subsequent discussion. This meant that what ended as written notes depended one hundred percent on how good that one person was at taking notes during the discussion. We observed that some people were better at taking notes than others and it sometimes

seemed arbitrary what was noted and what wasn't. We believe that it probably is like this in all collaborative activities. Still it is an issue to attend to, if for instance the results of the discussions should be shared with others or taken further by the same group at another time. To count on everyone remembering the same and everything from the discussions afterward is, in our opinion, naïve. To appoint the same person who picked the quote to take notes was perhaps a wrong choice as it can be difficult to join a discussion and take notes at the same time. Consequently, we discussed how we could systematize more what was noted and make sure that all players' opinions were equally represented in the summary.

### SECOND WORKSHOP

Based on the evaluation of the first round of playing the Merger Game, we decided to change the rules as follows: All participants choose a quote they think is relevant in relation to the merger. The quotes are glued onto larger pieces of paper with pre-defined boxes. When this is done, everyone has three minutes to write down why they think their selected quote is important. Subsequently, all participants hand over their paper to the person sitting on their right side. Now everybody again has three minutes to write down his or her thoughts. The same procedure is followed until all participants have written comments to all of the quotes. Finally, the participants one by one present the quote they selected and all the comments written by them and the other participants (see example in figure 3). This is followed by a discussion in which they jointly prioritize the most important arguments and write them down.

Thursday we played the Merger Game again. This time it was with a teacher (Else), a research assistant and former student (Maria) and a student (Andrea). The three participants selected the following quotes: "If we get huge, will we lose our feeling of each other?" (picked by Andrea, student), "The good thing here is the direct approach to the material" (picked by Else, teacher), and "You could argue there is no room at the school, but there are no people here" (picked by Maria, research assistant and former student).

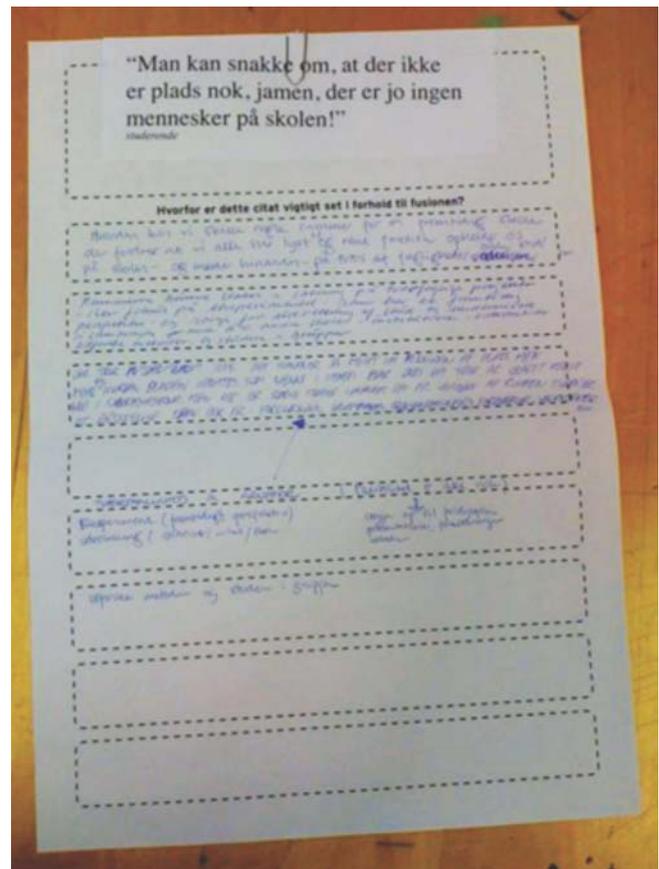


Figure 3: In the second version of the Merger Game all participants wrote down their concerns on a piece of paper, which was circulated. Thus, all comments to one quote were present on the same document creating overview and ownership by the participants.

### WORKING WITH THE MATERIALS

One of things that DKDS has been famous for is how working with the materials themselves has been a cornerstone in the education. This is often mentioned as one of the school's most important qualities. The following quote made the group discuss the design process at the design school: "The good thing here is the direct approach to the material" (workshop assistant). The teacher, Else started by saying that the reason why DKDS has many international exchange students is that DKDS is famous for working in an integrated manner with material, method and theory. To this the student Andrea responded: "Right now there is room for all three parts at our school. There is room for both theory and method and you experiment sometimes without really knowing how. Then Else said: "That is why we have so many exchange students; they know it. Maybe we don't know it ourselves. They are used to thinking about the product to be designed where we work more with incorporating theory and

method. We could be even better at that direct approach.”

All the participants agreed that what we are really good at at DKDS is working with the materials as an inspiration in the design process. However, it was suggested that it could be good to have even better access to different materials and workshops as a way to have easier access to inspiration. Maria said: “In the future it’s important for the design process that we continue to have the opportunity to easily be able to try out stuff and experiment when we need to. It could be very inspiring to get more direct access to various workshops, also the ones you normally do not use. It is important to have open and easy access to different materials.”

#### ***DISCUSSION OF THE SECOND ROUND WITH THE MERGER GAME***

The concept of letting the participants write their comments to a quote and then pass the paper on to the person sitting to their right worked well. They found it inspiring to read each other’s comments and then comment on both the quote and comments as a whole. Furthermore, they realized that many of their thoughts were actually overlapping. For instance Maria said: “It worked well to pass them (sheets) around. Even though we chose three different quotes, there were a lot of things that overlapped in our reflections.”

As we understand it, the new game material with pre-defined boxes for writing and the changed rules made the process more democratic because all the participants wrote comments to all the quotes. It seemed like the changes made them feel more ownership to the results and that they had a more common responsibility for all of the produced material, since they all contributed to it. Perhaps also having to express oneself in text both made the situation more serious, and prepared everyone for the common discussion that came later.

The structure with having three minutes for writing comments to every quote also worked well. It seemed as if there was an appropriate amount of time to write down immediate thoughts to the quote

without going too much into detail. In a sense, it created a dynamic mood and kept the pace up. Having everyone working individually with writing comments in parallel, in the beginning, also meant that lots of things were happening simultaneously. Everyone could be “heard” and leave marks that were present also after the workshop was finished.

When asking the participants to reflect upon their experiences with the game materials and the process of playing the game, it was seen as an advantage that we were internal facilitators. Their main argument was that the quotes we had selected were good representations of what is being discussed in the corridors at the school. Else expressed it like this: “The quotes are well chosen, because that’s what you hear in the hallways; that’s what people are saying.” We had an understanding of the situation at the school that made it easy to cut to the point and talk about the essentials immediately instead of having first to ask clarifying questions. Else was of the opinion that we wouldn’t have been able to get as far as we did with our discussion within the very limited timeframe if we had been coming from outside DKDS to facilitate of the process.

#### ***THE DREAM SCHOOL GAME***

In the first version of the Dream School Game, each player individually picks a photograph of an everyday situation at DKDS. Afterwards they discuss amongst themselves, positive and negative aspects of the situation. On the basis of the discussions, the players are then told to step into the as-if future (year 2012) pretending to be at the school of their dreams, without paying attention to the likes of, for instance, economics or politics. They were told to write a letter (in 2012) to their (fictitious) friend Jonas, who was considering applying for admission to the new school. In the letter they should describe the new school, as they want it to be, emphasizing the values and visions they personally feel are important.

The game materials consist of photographs and a game board with columns and rows in which to mount photographs and write. In the first session, about forty photographs were printed, cut out and

used as game pieces. The result from the first Dream School Game can be seen in figure 4.

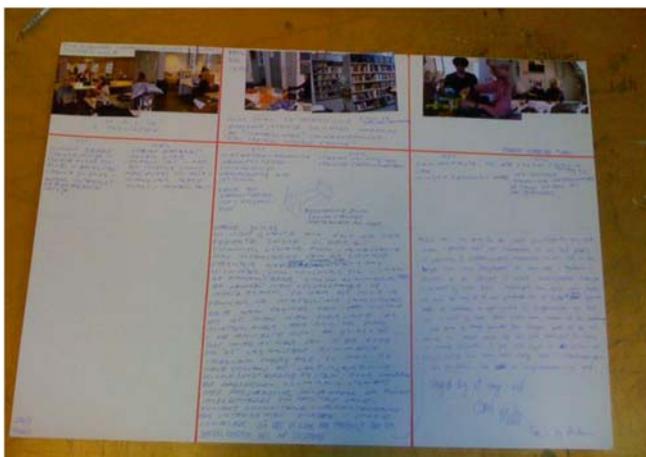


Figure 4: The result of playing the Dream School Game the first time. The game board consists of three columns for topics and two rows. The top row was for adding the chosen photographs, while the bottom row was for writing the letter "from the future."

#### **SOME LEARNINGS FROM THE DREAM SCHOOL GAME**

The first Dream School Game was played by Andrea (student), Mette (PhD student) and Tine (teacher and leader of the section). There were two facilitators; one guided game playing and the other one focused on documenting the session on video and taking photographs. Because of the lack of space, we will not go into much detail but will just summarize some of the learnings from the first play session.

At the beginning of the game, the photographs was laid out on a table and the participants were asked to choose one image representing something important to them or something they would like to address. As the players seemed to have difficulties making up their minds about which image to choose the facilitator said that they could complement their image with other images if it helped them frame the topic. This rule change really seemed to help the players. Everyone picked two images at once, and was ready to introduce the topics they found important. Thus a learning seemed to be that it is easier to frame a topic using images when they can pick more than one from the sample that were provided by the game designers.

The topics were first presented as: "Students, student-environment and attachment to the school": "Academic part and the more materially-oriented

part of the education"; and "good working environment, more cohesiveness, more play." The presentation of the images and topics generated a lot of discussion and sharing of dreams about the future. As an example, there was unity about the importance of a good and inspiring study environment. The first part of the resulting letter said: "Dear Jonas. You can look forward to starting your studies here. It's the coolest place. We have a dynamic flow when we switch modules. It's kind of a study oasis. We have a culture in which it is OK to leave things in the rooms. All students attending the same class share a room. It is allowed to use all the materials that are left from the previous classes. It really inspires our work, and being in the same room means that we collaborate a lot on the projects. It's great ..."

When issues are shared and discussed jointly it seems kind of natural that the minds wander and that many different aspects and nuances are touched upon. What took place was not only discussing positive and negative things about the situations on the images, which the facilitator presenting the games rules introduced. In the design of the game there seemed to be a gap between presenting and gluing the images on the game board and having to write the fictional letters. The gap consisted of all the words, which were said and shared orally but not noted down along the way to help frame the writing of the letter. When encouraged to start writing the letter, the players used two different strategies. One was to identify and write keywords like for instant "mobility" and "visibility" as a way to remember what had been discussed. The other was to frame the issues at stake as questions. For instance they wrote: "What tangible study-related artifacts will the future project room/studio accommodate?" "What is the ideal 'kit' for the rooms?"

When preparing for the next session the rules and game materials of the Dream School Game were altered. The numbers of images was reduced to around 30 to speed up the process of choosing pictures. As a new rule, the participants were to frame topics together. The aim was to facilitate a more open discussion, reflection and negotiation about other topics than those they might have had in

mind beforehand. They could use multiple images to describe the topic(s) and keywords or questions to frame these. The game board was altered with clearer spaces to fill out: one large space for pictures; one for keywords; one for pros and one for cons and at the bottom a space for the letter and the names of the senders. One sheet of paper was provided for each overall topic.

## DISCUSSION

In this final discussion, we started by looking at the two games that were designed, played, re-designed and played as part of a five-week class at the Danish Design School. Then, we reviewed how the class as such is a specific example of how classes can be framed in order to educate design students as co-designers and reflective practitioners.

### *FRAMING (AND CONTEXTUALIZING) DISCUSSIONS*

The aims of the two specific design games were to involve staff and students in jointly exploring diversity and unity for a design school offering many different lines of specialization in order to describe values and visions for the coming merger with The Royal Danish Academy of Fine Arts, School of Architecture.

Common to both design games was that they were based on existing views and practices at the Danish Design School. In the Merger Game, the game pieces were based on written statements from interviews. In the Dream School Game they were images showing different situations from the school.

Unlike the concept design games by Habraken and Gross (Habraken & Gross, 1988) the material in our game was very specific and illustrated everyday life at the school. Habraken and Gross used objects like pins and nails with no reference to the everyday practices of the architects who were playing their games. One of their arguments was that it made the players meet on a common ground in which prior experiences could not (and should not) affect the game playing. As opposed to this, our materials referred to everyday practices familiar to the participants. The aim was that the statements and images should evoke the participant's own experiences, and that sharing, comparing and

reflecting on these together with other people (perhaps having other roles within the school) could help them formulate common values and visions to be aware of and take care of during the merger and afterward.

Several participants in the workshops highlighted the contextualized game materials as very important. Their arguments were that these materials helped them remember many different issues and situations and thus sped up the process of discussing valuable things within a short timeframe. Where Habraken and Gross' research focused on understanding the specific game moves of the players in their games, our focus was on the content in the discussions, and finding ways to document these so they could be shared with people outside the game sessions. Consequently, we were very focused on the outcome of the games (people's different points of view on the opportunities and challenges in relation to the merger and their visions for their future dream school).

Using familiar game material also seemed a good idea seen in relation to the time. We only had 45 minutes for each game and therefore wanted to evoke a dialogue among the participants as quickly as possible. We succeeded in quickly evoking an intense dialogue. One of the participants (Else, teacher) told us that she thought this was only possible because we had chosen materials familiar to all the participants and therefore didn't have to spend much time explaining the game. Since the game materials were known to all the participants, we could spend the time actually playing the game instead of spending the time explaining it.

When comparing the Merger Game and the Dream School Game, their structure and thus the rhythm of playing, are also different. The last version of the Merger Game is made up of several sequences that are alike. The structure of each sequence is based on one quote and consists of choosing the quote, reflecting on the quote and making notes about the reflections. From the second round and on, one reads both the quote and the previous player's comments about it before reflecting and writing down one's own associations to the topic. Each

sequence only lasts a few minutes and they can easily be repeated until there are no more quotes on the table or until time runs out. Unlike this, The Dream School Game is structured of sequences that differ from round to round. In short, the sequences consists of choosing pictures, jointly discussing the situation in the pictures, stepping into the future to describe the school of their dreams and finally writing a letter to their fictional friend Jonas about it.

This means that the two games have different finishing points. One can be played by repeating a relatively similar sequence over and over again, which finishes when quotes or time runs out. The other is finished when all tasks of the various sequences are completed, which means when the letter to Jonas is finally written. In order to get experiences with game design and game playing, this seems a simple but important point to be aware of. What really is an essential challenge in preparing collaborative events is finding out how much time various activities take. Having “play” rehearsals are always fruitful in this respect. Another important point is that it is essential to develop a sensitivity toward what takes place in the co-creation event and be ready to, for instance, bend the rules, change the timetable or do whatever is necessary to achieve the intended purposes with the event.

The two games described can be seen as both relatively open and democratic. The participants could choose their own topics and argue for them. The change made to the Merger Game where each participant individually writes his or her comments on a piece paper which is circulated to the other players give each participant an equal voice. Still in the last part of the game and in the Dream School Game the players cannot be said to have an equal voice. Some people took more space than others for instance by talking a lot. A typical rule to prevent this in design games is turn-taking, or having the facilitator be the one to make sure that everyone is equally heard. When mixing people with various roles (and responsibilities) within the organization like being a student, teacher or from the administration, as in our examples, finding ways for everyone to be heard is very important. This is something to be address in a further development.

Two important and related issues are how to create ownership of the results and how to build upon these in the further design process. It seems that there is a fine balance between giving the players freedom and space to discuss issues and document these in their own preferred ways and providing templates and rules for how to play the game. This class has not found the middle path once and for all but has given the students experiences with several of the challenges of working with co-designing. One can argue that the examples given have nothing to do with co-designing as the participants actually are not co-designing anything. Instead they are co-creating a shared understanding of some of the values and visions that seem so important to be aware of when entering a process of merging with another educational institution – a process full of uncertainty about how the future will be and one that we’ll argue, has many similarities with (co-)designing.

It is important to note that the games developed by the students and discussed here have just been part of initiating discussions at DKDS about our identity and values in relation to the merger with KARCH. They were not part of the formal dialogue groups that were formed just before the class began and run by people from the management of the two schools. Still, several of the people who were part of the various dialogue groups participated in game playing. Our hope is that their participation in the two short game playing sessions gave them a better basis for taking part in the discussions with our colleagues and future co-students.

### *EDUCATING (CO-)DESIGNERS*

When reflecting on the class as such working with both existing design games and developing their own games, the students got both knowledge about and experience with developing, planning and facilitating collaborative design processes and how these can be documented to feed into coming design activities.

Using the game format for involving people outside the traditional design team in co-designing provides room for co-exploring diversity and uncertainty in a structured manner. The physical game materials provided a frame of reference but also something

that could spur reflections leading to new insights. Having an awareness of how to document discussions is important especially when the results have to be passed on to other people or be used at a later date.

Within only five weeks, the students got valuable personal experiences with making design games, organizing and facilitating co-design workshops, and working as reflective designers. Educating designers is not only about learning certain predefined skills. It is equally important to train the students' social abilities. Our students have to be team players. They need to know how to function on multidisciplinary teams. This includes having communication skills both orally and through different kinds of visualization skills. It also includes the ability to negotiate, handle disagreements, make compromises and stay loyal to decisions made. Collaborating on designing a game in common, organizing workshops and having to document, and facilitate these, trained their social abilities. In order to succeed, they needed to develop empathetic skills, be open and sensitive in the situations, and address social and ethical responsibilities, which are all important basic skills for designers to have.

Design students need to have experiences with reasoning, and especially reasoning about uncertainty as each design project is full of uncertainty about what to focus on, what choices to make, etc. These choices most often have to be made without full knowledge about their consequences (both intended and unintended). Working with open-design agendas in co-design projects in what have been called the fuzzy front end of design that involves various stakeholders seems to be ideal for learning through practice. The students are generally frustrated until a decision is made about what to focus on and what to design. However, what they need to learn is how not to jump to conclusions too fast, but instead to focus on what strategies to use in order to cope with complexity and uncertainty.

Within the field of co-design it seems very valuable to use the format of project-based courses in which students reflect on theories, approaches, methods and techniques on the basis of either pedagogical

exercises or design projects that are carried out in parallel with reading relevant literature.

In teaching design, it is of outmost importance to prepare the students for a career as designers. The goal must be to create learning experiences that in one way or another mirror design practice. Throughout their education, students shall develop their individual strengths and expressions. Simultaneously, it is imperative to develop competences in collaborating with various occupational groups, in order to deal with uncertainty involving relevant stakeholders and to help with creating an overview of the issues at stake. Using design games to frame collaboration in co-design projects, seems to be a valuable format for learning through joint explorations.

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