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APPROPRIATING A DBR MODEL FOR A 'RESEARCH THROUGH CODESIGN' PROJECT ON PLAY IN SCHOOLS - TO FRAME PARTICIPATION

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ABSTRACT

On the basis of an ongoing research project on designing play in schools, the aim of this paper is to explore how a fruitful combination of design-based research (DBR) and research-through-design (RtD) can enrich both research strategies. Through a number of examples of codesign processes with pedagogues, the paper explores how it is possible practically to communicate, reflect and frame participation *inside, outside and beyond* research through a codesign project. By exploring ways of participation within situated pedagogical practices and ongoing experiments, the paper unfolds ways for researcher and stakeholders to exchange and challenge worldviews and everyday practices. The main contribution is, first, to show how merging design-based research with codesign can add a focus on stakeholders as important participants by emphasising the systemising benefits of collaborative reflections and, second, to show how a DBR model can be enriched and extended in its understanding of experiments.

INTRODUCTION

The Research-through-Design (RtD) approach, originating in Frayling (1993), is today a widely used approach to practice-based design research (Vaughan 2017). Since this origin, related concepts such as constructive design research (Koskinen et al., 2011, Gall Krogh & Koskinen, 2020) and programmatic design research (Brandt et al., 2011) have emerged to refine understandings of what happens in such design research practices. Yet, despite their slight differences, what cuts across these terms and approaches is i) the research is typically multidisciplinary and ii) construction or experiments are considered to be at the core of the work and knowledge production (i.e. Bang & Eriksen, 2019).

In 2008, Koskinen, Binder and Redström first introduced the framework 'lab, field, gallery and beyond' with the aim of mapping different areas and the overall theoretical grounding of design research. The ongoing PhD project: *Pedagogical Play Practices* (PPP) in focus in this paper could be positioned in the 'field' domain as it, among others things, applies a codesign approach and is taking place in the context of two Danish suburban elementary schools. The focus is on play in schools and, beyond the children involved in play situations, the main collaborators throughout the project are the two local teams of pedagogues (Jørgensen & Skovbjerg, 2020). (By the term 'pedagogue', we refer to danish professionals with a specific education, trained to work holistically with children). In short, we characterise this PPP-project as a 'Research through CoDesign' project.

The PPP-project is enrolled in a larger project called *Can I Join in* (CIJI). The CIJI-project applies a design-based research (DBR) approach that - as RtD - is applicable for large-scale and multidisciplinary research projects. DBR is a research strategy developed in education research, where design processes are used as a way to organise, push and drive the research process (Ejsing-Duun & Skovbjerg, 2019). Within this research tradition, models of these processes have been built (Ørngreen, 2016) that argue for combining strategies from different design approaches (Ejsing-Duun & Skovbjerg, 2019). Yet, within RtD, DBR approaches and models do not appear to be well known (Skovbjerg, 2020).

The first aim of this paper, is to explore and exemplify how a DBR model can be appropriated to, merged with and add to the communication and reflections on and in a Research through CoDesign project.

Second, the aim of the paper is to explore and elaborate how appropriations over time of a DBR model can practically assist in framing participation differently and, by doing so, offer a perspective on participation as something interchangeable and scalable throughout a research project. Through examples of codesign processes with pedagogues, the paper explores how it is possible to practically communicate around, reflect on and frame participation *inside*, *outside* and *beyond* a Research through CoDesign project. This second aim is thus also to discuss ways of framing and practically staging participation in codesign projects, with the intention of challenging and transforming worldviews and everyday individual and collective situated pedagogical practices – in this case, in the context of play in schools.

MERGING OF DESIGN-BASED RESEARCH AND RESEARCH-THROUGH-DESIGN

In this section, we first outline the core points of DBR. Next, we outline core positions within a RtD approach to design research, particularly with an emphasis on codesign research with real-world everyday contexts, practitioners and practices. By combining strategies from RtD with a DBR approach, we show potentials for the fields to learn strategies from each other, especially in regard to the partnership of researchers and practitioners within collaborative processes. In order to show some of the crucial overlaps we see in the two approaches, we chose to present them in a plain manner.

THE APPROACH OF DESIGN-BASED RESEARCH

DBR is a relatively new research approach that has evolved over the last two decades in the education field (Anderson & Shattuck, 2012; McKenny & Reeves, 2018; Ørngreen, 2016). The overall purpose of using DBR has primarily been to research and develop

learning processes in collaboration with educators by using design processes as the motor.

Ørngren states that DBR is “an interventive method that researches educational designs (products or processes) in real-life settings to generate theories in the domain and to further develop the specific design through iterative processes” (Ørngren, 2016 p. 20).

These iterative research processes have been illustrated in different models, most of which divide the research process into four phases or domains. In this paper, we draw on a model that was developed in the PPP-project and inspired by the work of Gynther (2009) and Barab & Squire (2001). The model consists of four domains, and each domain is characterised by different research practices that to some extent apply different research paradigms. The four domains are: the **context**, where the field of the problem is settled; the **lab**, where principles for what we want to experiment with in the field are produced collaboratively; the **experiment** domain, where we intervene in the empirical field with our design experiments; and the **reflection**, where we (still collaboratively) discuss what we have learned and experienced, discuss possibilities of exploring further and developing prototyping theory and principles.

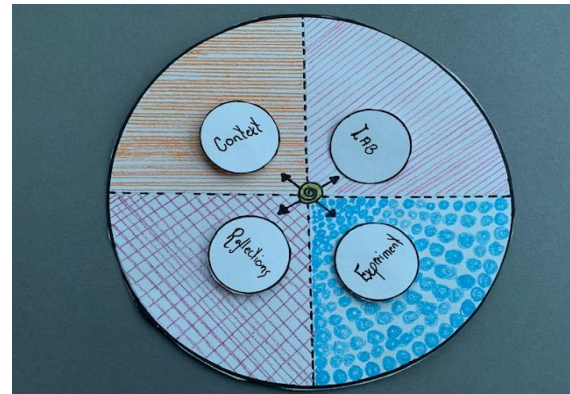


Figure 1 The DBR model, highlighting four domains of a design research process. The model here is constructed for and used in the PhD-project on Pedagogical Play Practices.

The dotted lines in Figure 1 between the domains and the spiral at the centre illustrate the dynamics of the research processes as a back-and-forth movement. The domains are interrelated and will continuously affect the practices of the other domains. This aspect correlates with the often stated ‘messiness’ of doing RtD. However, maintaining the ideas of different domains can shed some light on this messiness (e.g. according to how experiments expand and move the research). This, we will show in the analyses.

THE APPROACH OF RESEARCH-THROUGH-DESIGN, PARTICULARLY CODESIGN IN DIALOGUE WITH DBR

Within the frames of RtD, the effort of mapping different areas and theoretical grounding is ongoing. In the following, we will elaborate on notions of the ‘lab’ (and ‘field’), the ‘experiment’ and ‘codesign’ and merge them with DBR.

The Lab (and Field)

Koskinen et al. elaborate on *Research Design Through Practice* (Koskinen et al., 2011). Very briefly, they describe the ‘field’ in design research as inspired overall by the social sciences (including anthropological studies), often described and enacted as participatory or codesigned and largely carried out in collaboration with real-world stakeholders in their everyday use-contexts. In the same text, the ‘lab’ covers design research for example related to experimental psychology, with often craft-based and/or technologically driven experiments done in a studio or laboratory setting.

Prior to that, work by Binder makes some crucial points regarding the lab. Binder draws on ideas from the natural sciences of the lab as a controlled environment for experiments. In design research, however, according to Binder the interactions between participants in real-life settings are the core; as such, the lab is a setting where different stakeholders “collaboratively explore possibilities in a transparent and scaleable process” (Binder, 2007, p. 2). Transparency can be maintained through for example thorough notetaking, pictures and drawings. The outcome is not a product; rather, it is “to prototype a sustainable practice that can make sense of new design options” (p. 4). Thus, the lab is in the field.

In regard to the lab of DBR, this way of thinking can add to the notion of ‘exploring principles’ for design in real-life settings. We see similarities in ‘design principles’ to what Binder calls “designerly interventions” that can support creativity and “establish a workable design situation” (p. 9). As such, design principles, cocreated in a DBR lab, can initiate new ways of thinking about doing and help practitioners make different yet comparable designs in practice.

The Experiment

Related to RtD, Brandt et al. (2011) state that experiments are not tests in a scientific sense or confirmation of an implementation strategy but rather unfoldings of research, substantiating or challenging the questions that we ask. Experiments in design research can come in many forms and typologies e.g. *expansive* experiments that aim to uncover a new area while moving with the findings and *comparative* experiments that try out a concept across contexts (Gall et al., 2015). Experiments can come as artistically inclined activities and as aesthetic practices; they can be framed from the start of a project or continuously; and they can evolve in

many directions. However, experiments are generally regarded as the pivot of RtD research, as they can drag explorations and reflections in new directions and thus become important vehicles for knowledge production (Bang & Eriksen, 2019; Brandt & Binder, 2007; Gall et al., 2015, Gall & Koskinen 2020). Drifting and successively opening new perspectives on the research hypotheses is regarded in RtD as a strength and an opening to exploring the complexity of real-life settings.

In the first DBR research projects, testing didactic tools in collaboration with teachers was common. However, in DBR – as in RtD – purposes for and ways of doing experiments have been extended. In brief, in DBR experiments are understood as framed practices initiated in real-life settings – such as classrooms – containing iteration and adjustment (Barab & Squire, 2004; Günther, 2009). Today, openness in thinking about – and doing – experiments is not contrary to the understandings of experiments in DBR; however, we believe that the thorough theoretical grounding of experiments in RtD can supplement and expand experimentation within a DBR framework.

CoDesign

What we today, in short, often frame as codesign research (e.g. Sanders & Stappers, 2008) started with computing and information systems research back in the 1970s and 1980s. Among others, it was inspired by and merged with ethnographic and action research approaches, and it grounded the field of participatory design research (i.e. Ehn, 1988; Greenbaum & Kyng, 1991). The main goal in codesign – as in DBR – was then, and still is, to move experiments away from the lab and into real-life settings and to integrate methods and techniques from other research areas such as ethnographic fieldwork, participant observation and visual strategies (McKenny & Reeves, 2018) in close collaboration with practitioners.

Collaboration is the core, and codesigners are constantly searching for ways of “bringing together a wide range of actors to identify and develop possible futures” (Huybrechts, Benesch, & Geib, 2017, p. 145). Codesigning e.i. includes ambitions of mutual learning, giving voices to participant practitioners, framing ways for them to unfold their ideas and reflections, etc.

Participation in codesign first and foremost refers to ways of working sensitively in relations with stakeholders. It does so because the pivot is to enhance stakeholders ability to participate in a “genuine partnership” (Simonsen & Robertson, 2013, p. 5). By being attentive to what occurs, new possibilities for trying out and strengthening the partnership emerge.

Ehn and Ulmark (2017) state that “The aim should be rather to create a situation where all stakeholders have a role in the analytic and creative work as far as possible on equal terms, and sharing the responsibility” (p. 80).

Thus, participation becomes a matter of concern in which new and unforeseen forms of participation can become visible (Andersen et al., 2015). For Andersen et al., this primarily refers to new participants dragged in by stakeholders. In our view, participation as a matter of concern also points to the complexity of the researcher doing codesign in the field and thus becomes a participant in the everyday life of the stakeholders.

As we will illustrate in the analysis, we see participation as a continuous search for ways of positioning stakeholders, including ourselves, differently during a research process, and we use the DBR model to empathize how the domain of reflection can add to a codesign by pointing to the importance of creating spaces for coreflections. Doing so enables us to make framing an option for discussions on participation as a matter of scaling.

PRESENTATION OF THE PROJECTS CAN I JOIN IN AND PEDAGOGICAL PLAY PRACTICE

In this section, we present the CIJI-project and illuminate the obligations and contributions of the PPP-project in regard to the CIJI-project. In addition, we present how DBR is used in the CIJI-project in order to initiate the play experiments that are the pivot of the CIJI-project and the starting point of the PPP-project.

The CIJI-project explores how it is possible to design for inclusive play environments using DBR strategies (Barab & Squire, 2004; Jørgensen & Skovbjerg, 2020; Skovbjerg, 2020). The main research question is explored through four work packages: one about play types when designing for inclusive environments, one about communities of practice, one about measuring play experiences from the perspective of children and the last about pedagogues and their participation in play, which is this codesign project, PPP. The research questions of the fourth package are phrased as follows: *How do pedagogues participate in play? How do pedagogues handle inclusion and exclusion processes according to play? How do pedagogues collaborate in these processes?* The PPP project answers by exploring how pedagogues can act collaboratively in order to enhance the participation of different children in play. The ambition is to qualify the practices of pedagogues in order to qualify the school lives of children.

The PPP-project and the CIJI-project share fields, as they are carried out in collaboration with the same two teams of pedagogues. These pedagogical teams are situated in schools in two local communities. The first of the schools, School Red, has a diversity of children, according to cultural and social backgrounds. The second, School Blue, represents a more homogeneous group of children with primarily an academic background, except for a small group of travelling children – children from a nearby suburb who, due to a political decision on integration in schools, are

transported in buses across the city. Both of the schools answered an open call for collaborative partners in a research project on play in schools. The call was conveyed through BUPL Aarhus (Union for pedagogues). Four schools answered. The two participating schools were chosen according to their demographic differences. The schools joined in on a pilot study. The pilot study worked as an “initiating experiment” carried out in order to frame the project and establish the research methodology and positions (Bang & Agger, 2019, p. 4.8). Afterwards, the schools had the opportunity to withdraw. Neither did. Instead, they became cosignatories on an application for funding.

The interdisciplinarity of the CIJI includes different researcher areas, such as design, anthropology, sociology and psychology. The interdisciplinarity contains both qualitative and quantitative sub-studies and includes methods from ethnography, action research and factor analyses. The PPP-project, as a codesign study, is part of this interdisciplinarity and contributes to the overall project at a methodological level by framing, enacting and exploring the collaboration with the pedagogues.

By exploring and nourishing relations with the pedagogues, the PPP-project affects what is workable in the other subprojects. In some sense, the PPP-project eases the way for other researchers who for example might come for a week or two to conduct interviews. As such, the PPP-project lubricates a gate into the field for researchers in the larger project.

The CIJI and the PPP projects comply to the rules of GDPR and the Danish Code of conduct for Research. Parent signatures have been obtained and all children are free to leave the experiments at any time.

DESIGN-BASED-RESEARCH IN THE CAN I JOIN IN-PROJECT

The DBR approach with the illustration of the four domains is used continuously by researchers in the CIJI-project in order to position and interconnect each work package. We use it in order to organise the research processes, to position the main entrance for each work package and to provide transparency across the work packages through acts of documentation.

In the **domain of the context**, we investigate the school as contexts for play. Here, we use methods of fieldwork, review and – as mentioned – an initiating experiment in the pilot study. In the **domain of the lab**, we meet with pedagogues in order to plan and create play experiments. In order for the pedagogues to scaffold their play experiments, we provide them with design principles, including options for materials, space, time, number of children, play types and play practices. In the **domain of experiments**, however, we all play - with different roles: pedagogues being attentive towards the

children and the researcher making participant observations. In the **domain of reflection**, we initiate different types of reflective workshops on the experiences of the pedagogues' participation in the play experiments. We do so in order for pedagogues to adjust and develop their experiments and at the same time have the opportunity to share experiences. Each of the play experiments, designed by the pedagogues, runs over 6 weeks and has two iterations.

The PPP-project started out being active in all four domains of the CIJI-project but is gradually separating itself and expanding in the domain of reflection. It does so because pedagogues claimed a need to immerse themselves in the values that were enacted during the play experiments. Therefore, the domain of reflection became a new kind of lab, where the codesign researcher (the first author) and the pedagogues cocreated two kinds of play-reflective experiments called 'the dramatic reflection experiment', with five iterations across the schools, and the 'dress-up-doll' experiment, with three iterations also across schools.

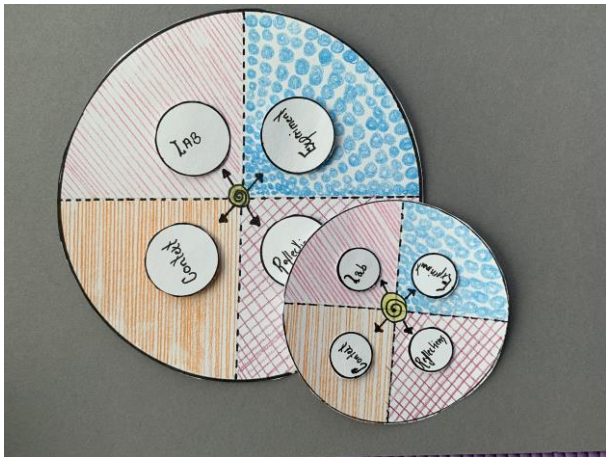


Figure 2 The DBR of the codesign experiments in the PPP-project positioned within the DBR model of the larger project.

Recently, critiques have commented on the notion of context, which in most original DBR is limited to the classroom. Some researchers plead for an expanded use of DBR outside traditional classroom settings (Ørngren, p. 36). The CIJI most explicitly does so since we do not investigate learning designs in the frames of a classroom but design for play in the school environment, which apart from classrooms include corridors, workshops, staff meetingrooms, leisure time areas and outdoor areas. This shift in focus means that traditional classroom settings transform and become contexts for play rather than learning, as does the rest of the school.

Apart from using the DBR model in communication between researchers, we use it in communications with the pedagogues. We do so in order to make the codesign process as transparent as possible. At every meeting and

workshop, we drag out the model in order to show them where we are and to indicate the agenda of the meeting or workshop. We do so in order to make the purpose of the doings of the researchers transparent. We want to show them how things in the larger research project are interconnected and how they themselves become participants. In other words, we use it to frame and scale the different roles of participation within the project.

FRAMING PARTICIPATION IN THE PEDAGOGICAL PLAY PRACTICE-PROJECT

In the analyses to come, we draw on empirical material created by the codesign researcher, originating from three experiments in the PPP-project. The empirical materials of the project consist of fieldnotes, participant observations, interviews, pictures and transcribed visual and auditive materials, crafted by the codesigner. In addition, written narratives and sticky notes made by pedagogues are included. The empirical quotations in this paper consist of transcribed materials from workshops in the domains of lab and reflection.

As suggested by Krogh et al 2015, the experiments in the project are categorised as both 'expansive' – drifting along, crafted by important issues of participation that occur – and 'comparative' – involving two schools and adjusted in relation to two teams of pedagogues and two groups of children.

The three experiments mentioned are as follows:

The play experiments – cocreated and carried out by pedagogues from August 2019 to October 2020. Here are four experiments (a 5th was cancelled in Mai 2020 due to Corona). Each experiment runs over 6 weeks and contains two iterations in each school. Empirical materials consist of participant observations, pictures and films.

The dramatic reflection experiment – cocreated and facilitated by the codesigner. One experiment, carried out over 6 months (2019-2020) containing five iterations across the schools. All iterations are videorecorded and transcribed.

The dress-up-doll experiment – created and carried out by the codesigner over one month (February 2020), containing three iterations across the schools. All iterations are videorecorded and transcribed. Cases are formulated and carried back to reflective meetings with pedagogues. These meetings are videorecorded and transcribed.

Insights from the experiments have emerged through analyses inspired by a coding system that comes from grounded theory (Flick, 2014). The codes used in the analyses are developed through selective processes, starting with several open codes then reduced to four clusters: a) *grown-ups interactions with children*, b) *school as frame for play*, c) *pedagogues participation in*

the PPP-project and d) *pedagogical professionalism*. This paper relates to b), c) and d).

FRAMING PARTICIPATION INSIDE THE PROJECT

WHY REFLECTIVE EXPERIMENTS?

From the beginning – actually, the first lab workshops in august 2019 - where the pedagogues were to plan and create play experiments, certain values occurred as obstacles for creating and doing play experiments. The first was about how the pedagogues understand play. A core value, frequently discussed, was the value of play as ‘free play’, meaning children playing without adults interfering. This value was a challenge in order for the pedagogues to frame and act according to the play. It became even more transparent when the experiments began to evolve. It seemed to affect pedagogues, providing them with doubts according to their actions. How to act supportive to children who experienced play difficulties without taking control over the play?

One pedagogue said: “It is a dilemma. Shall we support the children in play, nourishing and following their ideas, or shall we support the child who is in difficulties by managing the play?”

There seemed to be a perception of actions as a question of either-or, a dichotomy between actions of supporting play and actions of framesetting and adult-managed activities. This dichotomy emerged as a result of doing play experiments that bodily involved the pedagogues and tested their everyday practices in new settings. A frequently asked question was “When are we to frame and manage more and when are we to let more go of things in order for play to emerge?”

It seemed that these sensitive experiences of dilemmas in their own practices according to play renewed their need of reflections. That is reflections that mirrored their specific actions during the play experiments and questioned them as *professional pedagogical* actions.

The pedagogues asked for “A way to reflect upon our intentions of a play experiment, how children react in reality and how we then respond to their reactions.”

DRAMATIC REFLECTION EXPERIMENT

The codesigner developed a reflective experiment in order to examine these values and the tacit knowledge that seemed to disturb the pedagogues in doing play experiments. Such reflective experiments should enhance the pedagogues’ experience of being part of the project and support the movements in intentions and doings that they asked for. With a reference to Donald Schön (1995), it should enhance the movement from reflections *in* actions (according to play) to professional reflections *on* actions (according to play).

The experiment was inspired by ‘the magical if’ from Stanislavskij (1940) and merged dramaturgical techniques with a supervision-setting in order for pedagogues to *act out* their play experiences in the context of a reflective team of colleagues in a meetingroom at the school.



Figure 3 A situation from Dramatic Reflection where the male pedagogue play a role as a pedagogue who tries to motivate a child (the woman pedagogue) to join a play as ‘he’ likes.

The codesigner used the DBR model to create transparency in this experiment and the positions of participation that it installed throughout the process of invention. That is, through the lenses of the DBR model, the codesigner illuminated how the pedagogues participated in the domain of the **context** for this experiment by formulating the dilemmas that this specific experiment is to explore. In the domain of the **lab**, pedagogues and researchers cocreated and tried out different models of play reflection that ended up with a prototype, called dramatic reflection. In the domain of **experiment**, the pedagogues try out the prototype and, in the domain of **reflection**, we all participate in reflections on both the content of the reflective experiment and the prototype for reflections.

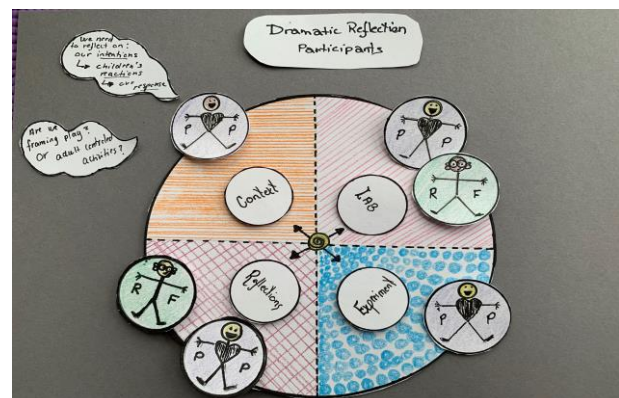


Figure 4. The DBR model used in Dramatic Reflections. The person symbols are: pedagogues = big heart and mouth; researcher = big eyes and ears.

During the experiments of dramatic reflection, the two pedagogical teams diverged. The team in School Red was very enthusiastic and liked to dwell on reflections such as “What might happen in the head of this child?” or “It helps imagining children’s experiences when we reflect on concrete examples without knowing the name of the child.” The team in School Blue, on the other hand, was not keen on continuing to do this experiment. A couple of them expressed a slight resistance. From ethical considerations the codesigner stopped and invited the team to exchange experiences in a traditional verbal setting and so they did.

DRESS-UP-DOLL EXPERIMENT

Starting from the domain of **reflection** from the dramatic reflection experiment, a new experiment occurred. This is the dress-up-doll experiment. In this experiment, the DBR model is used to show how our roles of participating are shifting.

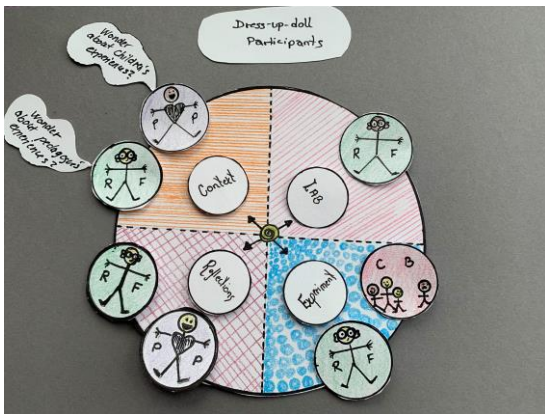


Figure 5: The DBR model used in the Dress-up-doll experiment, where our participation differed, and children participated in the domain of the Experiment with the codesigner.

In the **context** domain, we this time all participate in formulating problems. The problem formulated by the pedagogues from both Schools are: “How do children experience playing with pedagogues in school?” The problem formulated by the codesigner derives from the diversity of the teams and is thus formulated: “How do pedagogues experience playing with the children – and with me?”

In the domain of the **lab**, the codesigner now is the only participant, consulting a designer in order to create a dress-up-doll tool for her to play with children during the following experiment, in a way that at the same time can initiate the children’s narratives on play in schools. The reason for this is to explore children’s expressions and experiences while playing. At the same time, the codesigner wanted to put herself in a pedagogical play situation, using the design principles that the CIJI-project had given the pedagogues. The reason for that was to provide herself with the possibility of having a

conversation with the situation (Schön, 1995) as if she was a pedagogue in a play experiment.

In the domain of the **experiment**, the codesigner participates with the children. Starting from the codesigner’s own experiences in the domain of the **experiment**, cases were formulated and brought back to the pedagogues.

In the domain of **reflection**, again the pedagogues and the codesigner researcher participated. Here a new type of reflective workshops were organised around the cases. The idea was to frame reflections differently, accommodating those pedagogues who did not like to do drama. Instead reflections were made on the actions of the researcher.

FRAMING PARTICIPATION OUTSIDE THE PEDAGOGICAL PLAY PRACTICE-PROJECT

During all of these experiments, and especially in the reflective domains, ideas of *pedagogical professionalism* emerged as part of conversations on *schools as frame for play*. It became obvious that in this conversation pedagogues included other participants – first and foremost, the teachers.

For some of the pedagogues, teachers seemed to be a challenge if pedagogues are to design for play in school because teachers have the power to define the rules of the schools and classrooms. E.g. one pedagogues state: “There is a rule of no ball-play in this yard. The teachers made it because one of them was hit.”

To other pedagogues, teacher was mentioned as collaborative partners whom they wanted to include in the project.

“I wish the teacher could join in. Then they could learn about play and about what pedagogues can do.”

Even though the conceptions of the teachers diverge, it seems that bringing them into the conversations about play in schools, push the conversation in a direction where the professionalism of pedagogues are in play.

A pedagogue says: “Of course we shall work with play and play practices, that is our professionalism. We are not teachers.”

Thus, doing play practice might become a possibility for pedagogues to maintain a *different professionalism* from that of the teachers.

By using the idea of domain in the DBR model, we would say that the reflections made in relation to the experiments illuminate important matters of concern regarding the context as seen by two teams of pedagogues. That is, we gain important knowledge on *the school as a frame for play* now and for future designs for play in schools. Also, we gain knowledge of the role of the teachers as participants in an

investigation on *pedagogical professionalism* in schools.

FRAMING PARTICIPATION BEYOND THE PEDAGOGICAL PLAY PRACTICE-PROJECT

Above, we used the DBR model to show how collaboration with pedagogues on play in schools involves participants inside and outside the PPP-project and how this also points ‘beyond’. In this section, the question on participation beyond is further analysed.

As mentioned, we used the DBR model in communications with the pedagogues in order to enhance their research participation. A request from one of the pedagogues forced the codesigner to consider more specifically how the model can be used according to the everyday practices of the pedagogues.

In the end of a lab workshop, a pedagogue asked: “We have a mandatory task, given by the municipality. We are to work with ‘professional learning communities’ and we would like to use Kolb’s learning model. Could you please next time, integrate that model in the play project like the other DBR model so that we don’t have to work on two separate projects?”

After a brief hesitation, the codesigner agreed. The reason for hesitating was that this request at first seemed to point away from the CIJI-project and the focus on doing play experiments. The acceptance of the request, however, was a consequence of the codesigner seeing herself as a codesigner who is appreciative and responsive towards the everyday lives and needs of the pedagogues. Also, the codesigner understood the request as a sign of trust; a request for specific competences of the researcher and, as such, it could not be neglected.

As it happened, the comparison of the DBR model and Kolb’s learning circle established a frame for mutual learning and reflection. We set up the models facing each other, and we coexplored their appropriation according to pedagogical practices in general within the frames of a school.

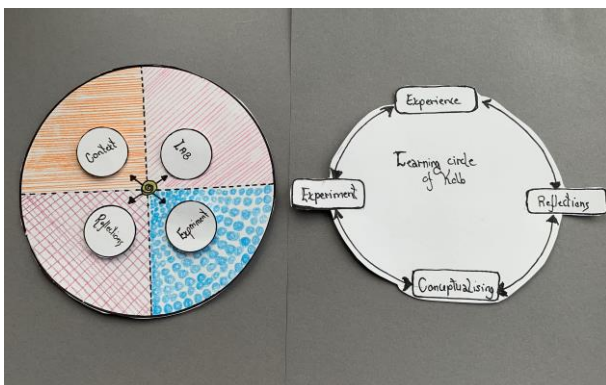


Figure 6. Similarities and differences of the DBR model and Kolb’s learning circle were co-explored in a reflective session.

We did not dwell on the fact that the models stem from different theoretical paradigms, as the Kolb model is a learning circle and the DBR model is a research model for design-based experiments. The idea was not to teach. Instead, we used the models as a starting point for discussing their applicability for pedagogues who want to try out new actions or experiments according to play and frame ways of evaluating these new actions. We discussed both models as supportive for the movement from reflections in actions to reflections on actions.

We also dwelt on differences. Here, it became obvious that the DBR model opens up the domain of *context* in a more explicit way. The context domain, however, is crucial, as the request for help indicates. The everyday life and practice of pedagogues are embedded in shifting tasks, devised and planned by stakeholders from outside the schools and away from the children. As such, this request for integration of the models and projects points at how different stakeholders, the municipality and research projects might complicate the busy everyday life of pedagogues, leaving it up to themselves to create coherence between projects and tasks while they at the same time try to prioritise and nourish proximity to the children. The DBR model seemed to support the pedagogues in discussing how contextual issues are crucial in relation to their ability to work professionally with play in schools.

At this point – where the pedagogues drag the model into a discussion that foregrounds matters of concern in their everyday life, the DBR model shifts status. It is now no longer just a model that supports iterative research processes; it becomes a model for discussing opportunities, obstacles and changes that must be addressed for pedagogues to continue working professionally with play in schools. As such, the model mirrors *the pedagogues’ participation in the PPP-project* by maintaining a focus on everyday practices.

Working with changes locally is always embedded in a broader societal and political context that must be contemplated in future design. It seemed the pedagogues, by using the DBR model on their own grounds, so to speak, became very much aware of this. Design for play in schools beyond both the PPP-project and the CIJI-project should somehow integrate teachers and municipalities.

DISCUSSION

In this section, we discuss how the merging of DBR, RtD and codesign can combine and add to each other’s field and how we, by merging them, can offer transparency and scalability for different possibilities of participation within collaborative processes.

APPROPRIATING AND MERGING DBR AND RTD APPROACHES IN CODESIGN

By appropriating and merging DBR with RtD, this paper illustrates how the two design research approaches can benefit (from) each other.

First, we argue that RtD can enrich and extend the notion of experiments in DBR, and by doing so, the field of DBR can transgress more rigid ideas of testing and implementing. A core feature in the way DBR is used in the CIJI-project is that we do not search for new methods to implement, as do many DBR studies (Akker, Gravemeijer, McKenny & Nieveen, 2006; McKenny & Reeves, 2018;). Rather, we cocreate experiments in order to search for actual challenges and future possibilities. This resembles the ideas of RtD and codesign, and it is largely through the understanding of experiment that RtD, codesign and DBR meet in the project. The CIJI-project drags the DBR approach into a new research area and, by applying open-endedness to the approach and by understanding the experiments as exploration of and questions for the field, it becomes possible for DBR and RtD to be combined.

Secondly, by merging DBR and codesigning, we add a focus on coreflection as an important process in experiments that frames stakeholders as important participants dragging and pushing a codesign project in new directions. We show how experimental reflective processes contain possibilities for changing roles within codesigning. By being attentive to what occurs, the codesign researcher can continuously explore collaborative processes by framing participation anew, facilitating new roles for stakeholders as well as for the researcher. We argue that creating situations where all stakeholders find the ability to participate on equal terms in mutual learning, does not mean they have the same roles to play throughout a research process and in each new experiment. We will also argue that collaborative reflections can benefit from experiments where the researcher attempts to throw herself into situations similar to those of the practitioners in order to use these attempts to exchange worldviews and experiences of the everyday life of a profession. Overall, we argue that framing participation differently throughout a codesign project can provide the researcher with new perspectives on participation and add to the notion of participation as a matter of scale.

Finally, we would like to point out that the DBR model can be used as a means of systematising ‘expanding and comparative’ experiments. In doing so, the model offer some transparency both within a RtD project and in the interrelations between a large and framesetting project and a sub-project (e.g. a PhD project). As such, we would say that the DBR model becomes a beacon for the design researcher’s own participation as a coresearcher in a large, framesetting project, in which she has certain obligations. At the same time, the model

shows how she does independent research, merging a RtD and a DBR approach. We will argue that the DBR model can be used to offer transparency and scalability for finding the balance between interconnectedness and independence in PhD projects that carry their research out as part of a larger project or in relation to other stakeholders that dictate overall research questions or problem to address.

CONCLUSION

Both DBR and RtD have evolved from ideas of multidisciplinary and with the aim of moving experiments away from the natural science lab and into real-life settings. Even though the two approaches are not yet very well known to each other, we conclude that they can benefit from their merging, especially in notions of the lab, the experiment and the reflection.

In our analyses, we have presented a case about play in schools in which the appropriation of a DBR model in a ‘RtCoDesign’ PhD project is used in order to make the framing of participation in codesign transparent and scalable. By showing how to frame participation continuously according to what emerges, we have demonstrated different scales of participation *inside*, *outside* and *beyond* research. We conclude that participation comes in many forms including the participation of researchers in the practices of stakeholders and as participants in larger projects. Thus, we conclude that framing participation is an important matter of scale for researchers doing codesign.

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