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Child-centred design decisions – how children's participation in the design process influences design students' decisions when designing for play

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Abstract This qualitative design research study looks at how children's participation in the design process influences design students and their decisions when designing for play. The study analyses the experiences and reflections of 16 design students collaborating online with children around the world and identifies challenges and opportunities regarding this way of working. One case example illustrates how a design student (Paula) is able to acquire a better understanding of a child (Pedro) and his everyday life and uncover cultural challenges for the child's opportunity to play. The article concludes on how a more balanced design process that includes collaboration with children can make design students become more aware of the cultural context they are designing for, leading to the potential of more child relevant play experiences.

Keywords Design for play, cultural context, toy industry, children's everyday lives, relevant play experiences

INTRODUCTION

In 2019, the global toy market was valued at USD 110.97 billion and is expected to grow even more in the coming years (Worldwide Toy Industry - Key Drivers and Challenges, 2021). The toy market must adjust to constantly changing consumer preferences to meet market demands and increase sales numbers. Designers have traditionally been an integrated part of creating and producing products for consumption, including toys, games and playgrounds, but changes in the business marketplace have created an emerging shift in the focus from objects of design to the purpose of designing (Sanders & Stappers, 2012). These changes interfere with the traditional product focus by demanding more attention from the end user. As Sanders and Stappers emphasise, 'Design practice is now moving from a preoccupation with the making of stuff to a focus on making stuff for people in the context of their lives' (2012, p. 18). This transition from an expert mindset, where users are seen as subjects, to a more participatory mindset, which sees the users as partners, influences not only how designers work, but also their role in the design process, from being the expert of products to working with people as 'true experts in domains of experience' (Sanders & Stappers, 2012, p. 18).

The same change in mindset has been seen in the academic field of designing for children, since Allison Druin back in 2002 pointed the attention of the design profession to the role of the child and its transition from 'user' to 'design partner' (Druin, 2002). Over the past 10 years, several studies have been conducted within this field, resulting in a variety of approaches for designing with children ((Cumbo, Eriksson, & Iversen, 2019); 2019; Dreesen & Schepers, 2018; Feder, 2020; Yip, Sobel, Pitt, Lee, & Chen, 2017). An increased interest in how to design with children is reflected in research as well: developing the relevant tools, methods and techniques for involving children in design (Fails, Guha & Druin, 2013), questioning how to define the roles in the design process by creating a shared understanding of children's participation in the design process (Barendregt,

Bekker, Børjesson, Eriksson, & Torgersson, 2016), wondering about how the child can become the protagonist (Iversen, Smith, & Dindler, 2017) and examining how to teach designers how to design for children (Castella, 2018; Eriksson, 2014). Several projects and initiatives have aimed at bringing this mindset to the design practitioners (Design for Play, 2017; Gudiksen & Skovbjerg, 2020; HUB for Design & Play, 2015; Play User Lab, 2020) with the goal of designing for more relevant play experiences for children.

The questions now become the following: How does this way of working support the design of more relevant play experiences for children? How does the focus on the child as a 'design partner' influence the decision-making process of the design process? How does this help the design world to not just produce more 'stuff' but design relevant solutions for the cultural context of children's lives? Finally, how do we make sure that the designers of tomorrow are aware of these challenges and capable of tackling them? To begin to answer these questions, the current study investigates how design students' collaboration with children in their design process influences the design decisions they make and how doing so impacts the final design.

BACKGROUND

For the past five years, the Design School Kolding has educated Danish and international design students completing their master's programme in 'Design for Play', and has shown these students how to design for children by letting children actively participate in the course and design process. Even though the course is practice oriented, it introduces the design students to theory in the field of child development (Ackermann, 2002; Vygotsky, 1978), children and play (Brown, 2009; Pellegrini, 2011) and children in design (Druin, 2002; Hart, 1992). The objectives for the seven-week course are stated in the course description, as follows:

> Child-Centred Design for Play focuses on exploring and understanding the concept of child-centred design and how to work from a child-centred perspective when designing for play. It takes the starting point in the children and their everyday lives to understand how, why and what is relevant to design, seen from the perspective of children. The course addresses areas such as child development, children's play behaviour, child culture and co-creation with children. Furthermore, the course covers tools and methods for designing for and with children. (Design School Kolding, 2021)

I have been teaching this course for the past five years, with the opportunity to continuously experience how this way of working influences the design students, as studied in my PhD dissertation (Feder, 2020). Since the course was reorganised in 2021 to be conducted online because of the COVID-19 lockdowns, the children's participation took place online as well. This changed the original scope of the course, but it also made it possible for international design students to collaborate with children from their home countries who had the same native language. This way of working expanded the variety of the participating children's cultural backgrounds and nationalities to include children of 10 different nationalities. This initiated an interest in whether culture influenced the decisions made by the design students in their design process.

As part of the course, the design students are expected to gain 'knowledge about legal aspects of working with children as users and co-designers' (Design School Kolding, 2021, Course description), as well as the ethical considerations of letting children participate in the design process. In the specific 2021 course affected by the lockdowns, the design students themselves got in touch with children between the ages of 3 and 15 who were acquaintances or family. They all made consent forms for the participating children and parents and were aware of the children's right to participate

voluntarily and freely in the conducted sessions. The sessions took place as weekly online meetups lasting one to two hours, including activities such as playing, gaming, talking and drawing.

METHODS

The study was conducted with 16 play design students at Design School Kolding as a part of a master's course in 'Child-Centred Design for Play'. Qualitative interview questions (Robson, 2011) formed the basis of the analysis of the design students' reflections (Schon, 1984) on the children's participation, here by identifying how the design students usually inform their design process, how the participation of children influences their design decisions and how working together with the children has changed them as designers. An in-depth case example of the experience of a play design process demonstrates the design results of a Brazilian child's participation in the design student's process.

The analysis was performed by registering and structuring all the design students' answers into an Excel sheet. This kind of structure created an overview of the answers, making it possible to compare the results and dive into the details of the specific answers. The analysis, findings and discussion are presented throughout the article, ending with the final conclusion on how the design students' reflections on children's everyday lives have been manifested in the development of their final play design. Even though the number of participating design students (16 in total) could have been higher to support the validity of the study, the specific findings from this course (in 2021) reflect the teachers' general perceptions of the previous courses (in 2017, 2018, 2019 and 2020), but it was not possible to study this until the COVID-19-related reorganisation of the course in 2021. Furthermore, the study builds upon PhD research conducted on the same course in 2017 and 2018 (Feder, 2020).

DESIGN STUDENTS' REFLECTIONS ON CHILDREN'S PARTICIPATION

The analysis is based on reflections and answers from play design students after their participation in the seven-week master's course titled 'Child-Centred Design for Play' (Design School Kolding, 2021). The design students collaborated directly with the children in their play design process in an online format and developed and acquired methods to do so throughout the course. The course also included an introduction to child development, child culture, children's play and ethical considerations when working with children in design. This course differed from other traditional design courses in the programme by not having a predefined brief from the beginning—this was instead expected to be defined by the students themselves, based on their collaboration with the children and their experiences of the children's everyday lives. After the course and their collaboration with the children, the students were asked to reflect (Schon, 1984) on their experiences, including how they usually decided on what to design for the children; how the collaboration with the children in the course influenced their decision making; and how the experience has influenced them and their design practice.

A tradition of making design decisions based on something outside of the child

Doing an analysis of the students' reflections and answers on how they typically decided what to design for children, it becomes clear that they usually have been informed mainly by theory, their own memories or other adults but rarely directly by the children themselves. Before the course, the design students were more likely to make their decisions based on something outside of the child: their own childhood experiences or their own design ideas, other adults' preferences like parents or teachers, theories about children's development and needs, anatomical studies of children or being

inspired by existing products for children, as exemplified by the quoted answers below. The themes, which were discovered in the analysis, have been framed as: Informed by theory, informed by the market, informed by adults, informed by themselves and informed by user tests.

Informed by theory: Being asked about how they would have approached the process of designing play experiences for children, five of the play design students are very clear on how they are usually informed by theory: 'I would base myself in the child development research to see the anatomic and developmental needs kids have, trying to implement that to my design'. The students are very focused on existing research, as another student explains: 'I would look into the theory on children in that age group I was designing for and then look into existing products who could fit my project'.

Informed by the market: Three other students have used a more market-oriented way of working, which is often conducted in traditional toy companies: 'I would look for something that is lacking, from an adult perspective, in the child product world, and look for something that is not fulfilling the function it should and then make it better'. This is often done without including children in the process: 'The initial research was to look into existing toy products [ ], and we didn't have any contact with any children in the process'.

Informed by adults: Ten of the sixteen design students have based their designs for children on insights from adults: 'We went into a family and talked to the parents [ ]. According to their problems, we decided what to design for the child'. The question made the design students reflect on who they have been actually designing for: 'I have never designed for children before, but I have designed for parents'. In the same way, they can be informed by teachers or other adults in the children's lives: 'In a previous project, my design was created based on a conversation with a school teacher'. They can try to understand the context of children without involving the children directly: 'In two of my projects, I have tried to gain knowledge about the child's relation to the context I was designing for—but the child didn't or only indirectly participated in the process'.

Informed by themselves: Six of the students had previously designed solutions based on their own childhood memories or earlier experiences with their children. When they introduced the design solution to the children, the students indicate how they were nervous about whether their ideas ultimately made sense to the children: 'I have based the primary part of my design process on childhood memories or on experiences I had in a kindergarten once, but when I was going to show my design to some children later on in the process, I was very nervous to find out this late in the process whether the design actually worked'. The students point to how they get their ideas for their designs themselves and how one of them decided to design something specific for a child, but it turned out that the child was not interested at all: 'I had a clear idea of what I would like to design, and I was looking for a child interested in that kind of thing, but the final design turned out completely different but much more relevant because the first idea just didn't work out for the child'.

Informed by user tests: The absence of children engaged in the design process is consistent in seven answers: 'I have designed for children, but I never involved them in the design before! Thinking about it now, I realise it doesn't make sense and that I probably missed some important outputs and the whole design would have been affected – and for sure more relevant for them'. These reflections make the students aware of when they have tried to involve children in the process and in what way: 'On a previous project in my bachelor's, where I designed a toy for kids, we only involved them in the final stage of the process, when we had the finished prototype, to test the product, record a video and take pictures of the product with them as we considered that would be its users'. They reflect on

how they involved the children and in which roles: 'In a previous project of the master's programme, we involved five kids in the testing of different rough prototypes and also in testing the final prototype, getting a lot of feedback from them that we could later use to improve the final result. In this case, they also came a bit late in the process, once the general direction had been established, but they had an important role in helping us tackle the final design decisions'. It also shows how the students reflect on when in the process the children are involved: 'In general, I must admit that I haven't worked with the users prior to the test phase before. I have never really thought about starting the design process by involving users. Previously, I have set and defined the frame for my concept and then used the children to ask them how I could communicate the project in the best possible way'.

The answers show that the design students are generally used to applying relevant existing theory to their designs, which is an important part of designing for play (Skovbjerg, Bekker, d'Anjou, Johry, & Quinones, 2021). However, without making sure that the design is relevant for real children in their everyday lives, the risk is that the final play design will not be used by the children in the end (Sanders & Stappers, 2012). They seem to be working in a more product-oriented way by focusing more on how it fits the market than how it is relevant for the children (Hendricks, 2011). Most of the fieldwork insights come from other adults, and even though adults are often interested in doing the best for the children, the risk here is missing out on the children's voices and perspectives (Hart R. , 1992) especially when designing for play for children because play has a meaning of itself for children (Skovbjerg, 2016). When the design students are not working together with the children, they resort to their own experiences of being a child. This can be inspirational, but it can also be a dangerous method to use because they cannot be sure whether their experiences are relevant for the children (Resnick, 2017). The common thing in product development is to involve the user towards the end of the design process, either as testers or as part of the communication of the product (Druin, 2002). However, this is very late in the process to realise if the design is not working as expected. Most of the students have not even thought about the option of spending time with children before deciding what to design (Feder, 2020). Here, the risk is missing out on obvious opportunities for new play design with a high relevance for the children as the end users (Play User Lab, 2020).

In this more traditional way of designing for play experiences, most decisions regarding the design are based on something outside of the child as the end user. The following part looks at how the design students have changed their way of making decisions while spending time with children in their everyday lives, here being informed directly by the children.

Making decisions based on insights from spending time with children in their everyday lives: In the master's course 'Child-Centred Design for Play' at Design School Kolding, the students receive an introduction to how to collaborate with children in their design process. Even though this way of working is new to most of them, they engage in the process and try out this new way of informing the design. The following analysis indicates how the design students have based their design decisions on these experiences and insights, including the decision on what to design, which originated from the children, their everyday lives and their interests.

Influencing the direction of the process: Starting the design process without any predefined design brief, the design students are forced to be very open and curious from the beginning of the process. The analysis shows that through different kinds of activities, they could gain a better understanding of the child and the child's interests, steering the process further in the relevant direction and ending up with a design very close to the children's desire: 'During several collaboration sessions, where we played, talked and did design exercises, I got to know the child much better. Together, we chose a focus area, which the child was very interested in; we dove into it together to understand it better and how to support the playfulness in the best way. We did different proto-

types together, tried them out during the process and ended up with a final version of the design'. Involving the children in the design process not only informs their design, but also the process and in which direction it makes sense to go.

Confronting the design students' ideas: This way of working so closely with the children challenges the design students' own ideas and expectations about relevancy. This is a hard lesson but also a valuable one that helps the design students make sure that what they design also makes sense to the end users: 'At first, I was going to create some teddy bears expressing different kinds of feelings, but that didn't make sense for the child. Then, I would do an audiobook or podcast series, but the child wasn't interested in listening to stories alone—I realised that she needed visuals to look at during the stories, so that was what I did instead'. In this example, the designer respects the child's need that emerged during their collaboration, hence changing her own idea of the design based on that.

An open process leads to more interesting insights: Not only do the activities with children provide the design students with insights that help them make decisions in the process, they also show that the more open the process with the children is, the more interesting insights they obtain: 'By doing different exercises with the kid and her sister, I got a lot of insights that helped me converge. I was surprised to find that I got the most interesting insights at the end of the meetings when we were wrapping up and the time was not structured anymore. I decided what to design when I realised that this was in fact what the two sisters needed: to have more time together because that was the most important and present topic in our meetings'. In this case, it turns out that it is not a play product that is needed but the facilitation of more playtime together.

From limitations to opportunities: It can be difficult for design students to take the children's needs into consideration and not have the same amount of control they are used to. Nevertheless, it turns out that the design students are getting even more ideas to choose from and that it can be difficult to decide which of them to choose: 'When doing child-centred design, the decisions were made differently because the child was involved in all stages of the process. It could be seen as a limitation, being forced to put aside your own ideas and knowledge, but instead, I experienced a lot of opportunities and ideas arising from the sessions with the child. It was then easy to build concepts and almost difficult to choose between them in the end'. Being with the children informs and inspires the design students to come up with new ideas, which they might not have without these interactions with the children.

Professional decisions based on relevant insights: The process makes the design students reflect on their different roles in the design process. They are a bit challenged by the balance of how much they should let the children decide and how much they could decide on their own, here considering their professional competences as design students: 'I analysed the data I produced in the cocreation sessions we have had together, and from that, I decided on the idea for the design. I asked the child for help as to what the design should consist of, as he was a kind of design partner and he also tried out the prototype. In that way, he became the tester, user and informant, whereas my role was more that of a facilitator, observer and interpreter—and as the designer, I also made some decisions without him'. The reflection shows that it is not about competing over the right to make decisions but about making professional decisions based on relevant and informed insights.

The students' reflections show how their collaboration with the children influences their decisions in different ways. It changes the direction of the process, making it more open and, hence, leading to more relevant insights that challenge the design students' own ideas (Feder, 2020). It

turns out that including children in the design process creates more opportunities than limitations and leads to decisions based on relevant insights (Iversen et al., 2017).

From a critical point of view, this study is based on 16 design students' individual experiences, and the examples described here are just that: examples. The course also only includes designing for a single child without knowing if the design would be relevant for anyone else. The design students go from one side of the spectrum to the other, from designing for children they do not know at all to designing for that one child that they get to know very well. The aim is to find the right balance so that they could make relevant designs for children in general. Nevertheless, the results indicate that their collaboration with children results in new and other decisions that they would have missed out on without the participating children being involved. It is not just the decisions that are being influenced by the children. As shown in the following, the design students and their way of working are also affected.

The influence of working together with children: When the students are asked how their experiences with the children have influenced them, they seem reflective and aware of how this has changed them in different ways, as the below quotes exemplify. Some of the effects have been identified during the process and some afterwards, here based on more overall and retrospective reflections.

A changed perspective: Being encouraged to spend time with children in their everyday life seems to offer new perspectives and changes in the mindset of the design students: 'My experience with the children influenced me to look at things from a very new perspective'. 'The experience with the children influenced me in a way that I changed my way of thinking, my way of doing design research'. They discover the value of being together with the children, not just reading about children and their development: 'Instead of just reading a lot of articles about it, I think it is much more valuable to be in contact with the children and see what happens there but without forcing it'. It makes the design students more comfortable being around children and not so afraid of including them in their design process: 'It helped me in being less afraid of the process to collaborate with someone real, in this case a kid, who has necessities, likes and dislikes of their own and who was somehow showing me the path I should follow'. Collaborating with the children has not just informed their design process, but also them as professional practitioners.

Let it flow: The design students have become much better at listening to the children, asking clarifying questions and being patient when together with the children. Spending time with the children has taught them to expect the unexpected, improvise and be more open in the process and let the children take the lead: 'I've learned to listen better, to ask for the why's and help them in the reasoning process, to improvise when needed and to be prepared for the unexpected in the meetings'. They have been forced to let go of the control and let the process flow more freely together with the children, which can lead to new and unexpected insights and understandings: 'I had to learn to let things flow and not be nervous about it because sometimes, not everything will be practical and direct, but that's just the way it is with children—and with design. I think it also influenced me to look for answers in a different way and expect that those answers might be in the weirdest places, that looking from outside of a situation you can't see'. Involving children in a process creates more uncertainty, but it has also taught design students to trust the process and let things flow.

Becoming aware of children: The design students have become more aware of the different approaches to use when designing for children's play experiences, not just the more traditional ones. They have become more inspired and motivated by knowing who they are really designing for: 'This way of working with the children has given me a better understanding of who I am designing for,

but it has also inspired me and kept me encouraged throughout the process—it becomes meaningful and real to know who you are designing for'. 'Designing for children makes so much more sense when it is done this way'. They have become aware of the ethics of collaborating with children: 'The experience has given me a better understanding of how to create a more equal collaboration with children'. They have also gained more focused attention on children in general, children's rights and the need to listen to the children and involve them in the process: 'I think more people should listen to the voices of young people and respect it more'. 'We should listen to them carefully when designing with them'. Working together with the children here exceeds the intended purpose of informing a specific design process by raising an awareness of children's rights in general.

Play to design for play: The children have reminded the design students of what play is and how important it is to play—and that they should play some more: 'I try to understand the magic of play through theories, models and products, but to see children play makes me want to know more and understand more because there is so much in the mood, the atmosphere and the senses that makes children's play a well of knowledge'. The students relate the act of play to their processes and practices: 'Being with the children reminds me that I have to play myself—both as a person and as a designer. Because when I am experimenting, then it's also play and I forget time and place. I often forget the importance of that when I have to live up to outer expectations'. In this way, children's play becomes a driver for the design students when they are designing for play for the children.

Designing for children – or their parents: Spending time with children and getting a better understanding of them and their everyday life has made some of the design students able to identify if a play product has been designed for the children or if it is done on the behalf of adults, parents or teachers: 'Now, when I see products designed for children, I can see if some of them haven't been designed with a child-centred design approach but more centred on what the parents would like'. This reflection shows how students can become more aware of who they are truly designing for, which could be made even more explicit in the coming courses.

These examples indicate how collaboration with children has influenced the design students and changed their perspective (Feder, 2020). They have learned to let the process flow and to be inspired by the children's play (Resnick, 2017). In the same way, they have become more aware of the children and who they are in fact designing for—the children or the children's parents (Castella, 2018).

On the other hand, as mentioned previously in this analysis, it is all about balance. The aim is not to rely completely on the children and their demands but to balance existing theory and insights from the collaboration. It is about being aware of who they are designing for in the specific design process—whether it is the children or their related adults. The design students cannot expect the children to tell them what to design, but they need to translate what the children can share on their level of abstraction into the design process. The below case exemplifies how this balance and cultural awareness leads to the process of designing for children's right to play experiences.

CULTURAL AWARENESS IN DESIGNING FOR PLAY

The above-presented analysis shows how the design students have moved away from the somewhat traditional way of designing for play experiences towards having a more dedicated focus on children. The following design case exemplifies the implications of this transition by following a designer's reflection on her design process; it shows how the increased collaboration and focus on the child reveals unexpected challenges and opportunities (Sanders & Stappers, 2012), along with how these can be identified and addressed by making the child and child's cultural perspective a part of the design process.

Designing for children's right to play

As a part of the 2021 master's course 'Child-Centred Design for Play', a Brazilian play design student, Paula, and a fellow student, Marta, worked together online with a 4-year-old boy, Pedro, from Brazil. The following case describes Paula's experiences of working with Pedro: her reflections on the process, the involvement of the child and the methods used. It includes a specific focus on how the interaction with the child influenced the discovery of an unexpected but very important need related to play, leading to the decision of what to design:

> When I was going into the design process with the children, I was scared in the beginning. I was afraid he would not be into it or didn't want to talk to me—and I am not the best with tiny humans—but from the very beginning, he was excited and wanted to interact, even though he was shy. We built some kind of relationship there that I didn't imagine we would. I was lost for a long time, trying to force cocreation sessions, but a 4-year-old couldn't possibly understand what I was trying to tell him. So we started listening and playing around. We dropped the structure of doing everything right step by step and started doing everything he wanted to do, talk about everything he wanted to talk about, and in one of those sessions, we realised that the space was not fairly divided, and he gave us signs of that several times along the way. So we put everything together, in a way of trying to give him what he needed. Then, we had the concept, so we just needed to concretise it in a physical way. That's what we do best as designers.
> - Paula, design student

In the collaboration with Pedro, Paula was compelled to change the way of working to make it fit with a 4-year-old child (Druin, 2002). That change led to a more open and unstructured process (see Photo 1) of following Pedro's lead in playing, talking and listening (Gudiksen & Skovbjerg, 2020), which had the benefit of revealing Pedro's fundamental challenge regarding play: no space for play.

> The decision of what to design for the child was very much made based on all the things he was lacking that he told us about. We talked a lot, we played a lot, we ran, hid, drew, glued things together and built a lot of LEGOs. The process was based on video calls we had every week and messages by audio and pictures. After getting all the insights, we had to make the more design-specific decisions. Some were based on materials, while others were based on aesthetics and functionality. We ran them by the child afterwards to see how he would react to the design in process, and we continued with the positive answers.
> - Paula, design student

The decision of what to design was based on insights produced through play with Pedro (Castella, 2018). Paula was very explicit about how she made the more design-specific decisions based on her own professional design competency (Sanders & Stappers, 2012), without putting that responsibility on Pedro, while still keeping him in the loop to ensure relevancy for him.

> Before being together with children in the design process, I never really thought about it; but now, every time I see products for kids, I wonder how they were created and what the adults want to achieve with that. And most of the time, I think that what exists now is mainly products designed to children by adults because we, as adults, want them to grow in a specific way and with a specific way of thinking, and that is worrying.
> - Paula, design student

Photo 1. In the beginning of the process, it was all about getting to know the child by playing with him, following his lead and trying to understand his everyday life and his interest and challenges

The collaboration with Pedro not only informed Paula in the specific design process, but it also made her aware of a more general and, in her own words, 'worrying' dilemma. Many products and design solutions for children have been designed by adults to influence the children in a specific way decided by adults because they think that way is important. An example could be the category of educational toys, which is meant to inspire children to play, but the parents' real intention is for the children to learn something. This is not in itself a bad thing, but if we, as adults, are not aware of this, we tend to forget to design on behalf of the children and what they see as important (Iversen et al., 2017), like Pedro's need for a space to play.

> This approach taught me how to not be stressed when a design decision that I believe is the best is actually not and how to cocreate with users, to go in ways you never thought would be a possibility or that at the beginning it seems stupid to go that way. But you have to do it, and you have to be open about it … because you are not the expert of your user's life: you are just a person that knows how to design.
> - Paula, design student

Paula may have been the expert on design, but she had to accept that she was not an expert in her user's life. This included some unexpected confrontations and realisations, but also a more agile ability to change the direction according to what makes sense for the user (Play User Lab, 2020). For Paula, that led her to design for Pedro's right to play (see Photo 2), instead of designing specific 'stuff' for him to play with (Sanders & Stappers, 2012).

The final play design

In the design process, Paula worked so closely and open-mindedly with Pedro that she was able to identify an undiscovered need: his lack of space for play in his family's small apartment in a big city in Brazil. According to Pedro, the space was not fairly divided among the members of the family, and he experienced a lack of space for him to play in his own home. That inspired Paula to design a carpet that could empower Pedro to occupy a place in the apartment for him to play. This could

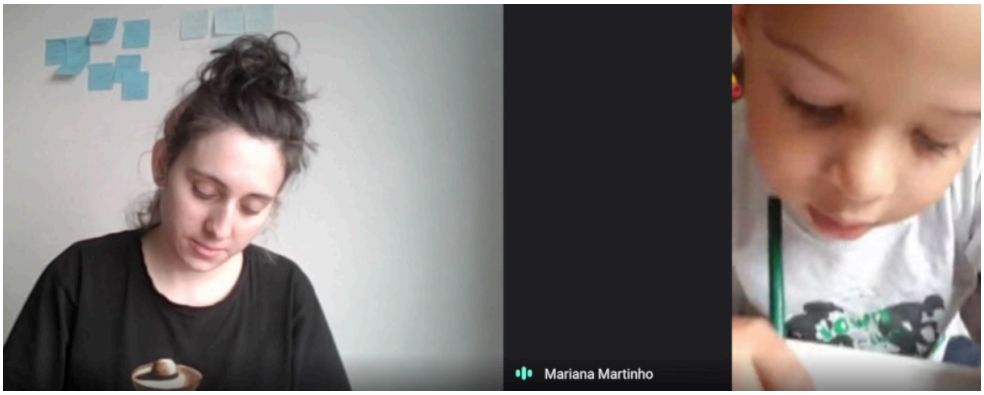

Photo 2. The collaboration put emphasis on having a good time together and identifying the child's interests and needs through play

be a space where he could build up his own play experiences with his own stuff and keep his play activities there for as long as he wanted.

The final design consisted of different materials, textures and colours, representing different kinds of nature—water, forest, sand and rocks—to support Pedro's imagination of play when using the carpet (see Photo 3). The size of the carpet was big enough for Pedro to lie down on, and it was light enough for him to move it around in the apartment, depending on where he wanted to play.

The design concept was named 'Ilha Pimpampum'. 'Ilha' means island in Brazil and illustrates how the child creates their own island in the middle of something else. 'Pimpampum' is a word used in Brazil by children and in fairy tales, referring to something that is done in the moment and for fun and that can be changed or end whenever one wants it to be. In this way, Ilha Pimpampum can allow one to create and shape their own space and time for play as they want. The name incorporated the empowerment it can bring to the child and how the carpet can become a physical manifestation of the child's right to play (see Photo 4).

If Paula had proceeded with her traditional way of designing for play experiences, she would not have collaborated with the children in her process and never have had the chance to identify the primary need of the child regarding play: a place to play. Thereby, the child's participation in the design process influenced the design student's decision on what to design, making the design more relevant to the child.

CONCLUSION

The current study has examined how children's participation in the design process influences design students' decisions when designing for play. The analysis suggests that it is all about balance when designing play for children. The participating design students were used to making their design decisions based on something outside of the child when designing, primarily informed by theory, the market, adults, the design students themselves or user tests conducted towards the end of the design process. None of them was used to including children in the beginning of the process before having decided what to design. In the present study, time spent with children in their everyday lives influenced the direction of the design students' processes. This collaboration challenged the design students' ideas and expectations in a more open process that led to more interesting insights. Instead of experiencing limitations about this new way of working, the design

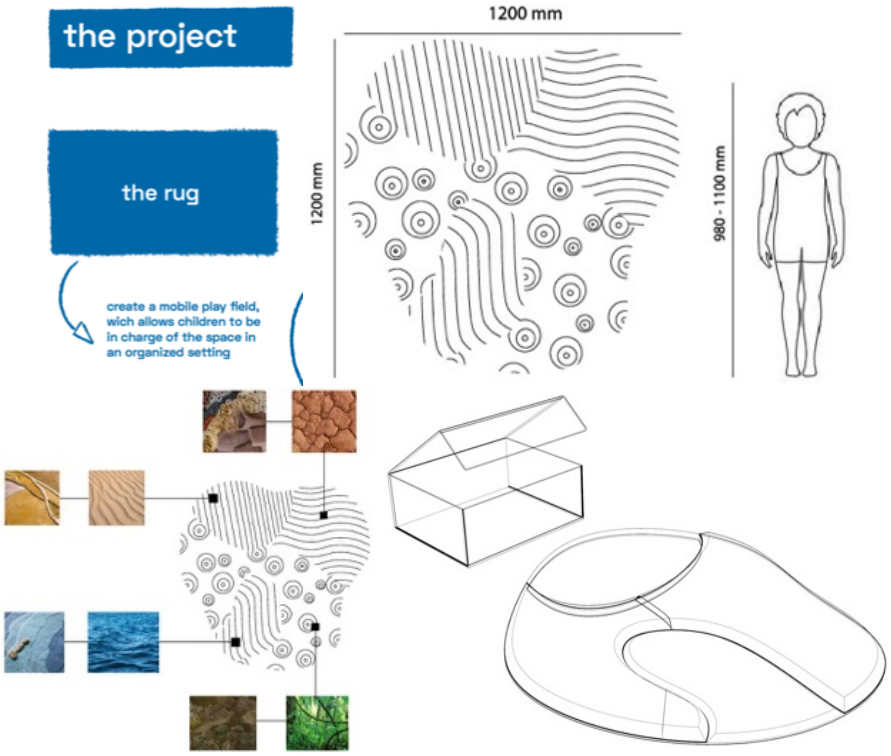

Photo 3. The specific design decisions were based on the insights from the experience of the child's play

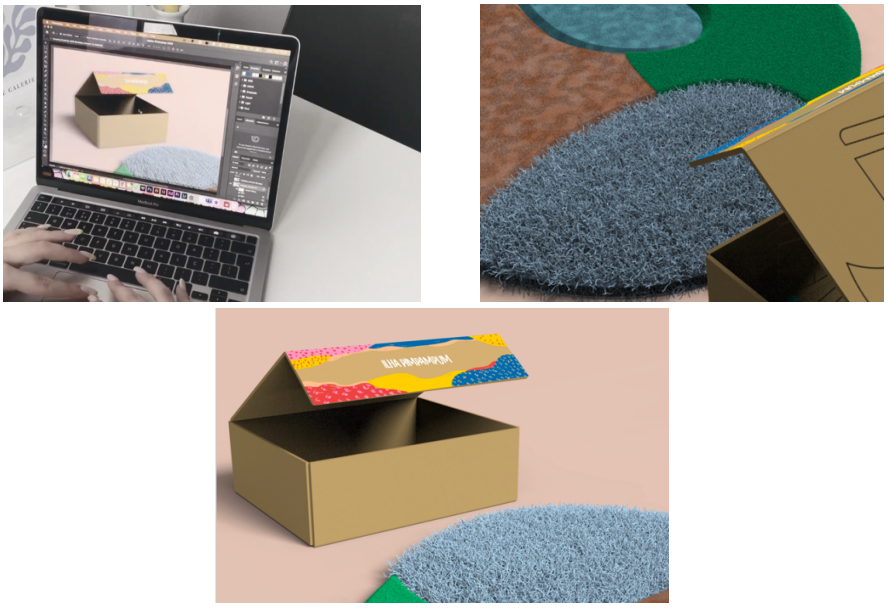

Photo 4. The final design in the form of a carpet that allowed the child a place to play

students experienced new ideas and opportunities, as well as the inclination to make professional decisions based on more relevant insights. Working together with the children changed the design students' perspectives, and they became more aware of the children. They followed the flow, played with the children to be able to design for play, and designed specifically for the children and not their parents.

This case example has revealed how a more open and unstructured process and following the child can uncover relevant cultural needs that should be addressed by the designer. It also shows how insights about children can be achieved through play, here while highlighting how design decisions should still be made through design. The case points to the importance of not just designing on behalf of adults, but also on behalf of children. If we continue to design for something outside of the child, there is a risk of ignoring the fact that children have other needs. Therefore, it is not just that including children in the design process is a good idea. We also need to ask why this is a good idea. We can answer this simply: it is because the inclusion influences the design students and their decisions, and how this impacts the final design solution and its relevancy.

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