De Voelvlek

Appendices

Integrated Product Design
Industrial Design Engineering MSc. Thesis
Kimberley van Kampen

Februari 2024

HOGESCHOOL UTRECHT & TUDelft

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Appendix A: Approved project brief

TUDelft

Enabling inclusive play by facilitating parental contact

project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date   03 - 07 - 2023   22 - 12 - 2023   end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Currently, it is seen that children with disabilities have little contact with their non-disabled peers and play outside less often. This negatively influences their physical, social-emotional and cognitive development, their quality of life and their inclusion in society. As well as preventing the normalisation of disabilities within society, which causes people with disabilities to be continuously disadvantaged. It would be desired to prevent this from happening. Facilitating good inclusive outdoor play can positively impact all of the effects mentioned above.

Child therapists support children with disabilities and their parents to participate in daily activities. As a result, they have a significant impact on these children's and their parent's lives. However, it was seen that child therapists do not focus (enough) on inclusive outdoor play (as they miss practical tools for this). Therefore, the HU, a member of 'het samenspeel consortium', focuses on developing toolkits for child therapists to facilitate inclusive outdoor play. This is a part of a larger project that researches the interaction between child therapists, parents and children.

During their research, they found a lot of different factors, stakeholders and barriers that play a role in inclusive outdoor play, creating an intricate system of stakeholders and their influences. One of the parts of this system revolves around the parents of children with and without disabilities and the influence they can have on inclusive play. My project will zoom in on this part of the system.
Parents of children with and without disabilities can both create social barriers without necessarily being aware of this.

Parents of children with disabilities play a large role in deciding if and when children with disabilities can go outside to play. Playground experiences can influence these decisions (e.g. social interactions with other parents, the safety of their child, bullying, etc.). Parents also influence how much a child can play with their peers. These things can form social barriers for their child with a disability.

Parents of children without disabilities have an influence on how accepted parents of children with disabilities feel at playgrounds. On top of that, they often do not know a lot about children with disabilities and have little to no knowledge of their needs and abilities. As a result, they either try to prevent dealing with children with disabilities, or they become overly worried and protective. Therefore, they often prevent children with disabilities from participating (to their full ability) in play with other children.

Consequently, a knowledge and social gap between parents of children with and without disabilities exists and remains, obstructing children with and without disabilities from playing together.

One of the possible limitations of this project could be the stigma around disabilities. For example, the idea is that children with disabilities cannot play together (well) with children without disabilities as they cannot contribute and participate at the same level. On top of that, stigma can lead to self-stigmatisation. This could result in children with disabilities thinking they are unworthy of playing with children without disabilities. And lastly, there could be an unwillingness of certain parents of children without disabilities to learn more about children with disabilities.

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PROBLEM DEFINITION **
Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Parents of children without disabilities often foresee issues with inclusive play due to their lack of awareness, information and knowledge. Their view and understanding could be changed by parents of children with disabilities. However, there is a social gap between them, also causing awkwardness towards each other and children with disabilities. Therefore, this project will focus on stimulating the interaction between parents of children with and without disabilities to close this awareness, social and knowledge gap.

This project will mainly focus on parents of children that attend primary school (age 4-12 years old), as this is the age at which children play outside most often and are still developing themselves.

To allow children with disabilities to play together more often with others it is important that their (new) friends live nearby. This can be done by focusing on the level of neighbourhoods (as opposed to cities or municipalities). This will also decrease the barrier for parents to take their children out to play as they do not have to travel far.

Desired end-result:
- Parents actively supporting children with and without disabilities, within a neighbourhood, to play together (more).
- Increased number of times, duration and quality of the play children with and without disabilities engage in together.
- Improved communication with and empowerment of parents in the communication triangle between child therapists, children and parents.

ASSIGNMENT **
State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Within this project, I will research how a sustainable interaction between parents of children with and without disabilities within a neighbourhood can decrease the social barriers that prevent children with and without disabilities from playing together. This will be reflected in a testable prototype that will facilitate the desired interaction.

The final form of the end result has not been determined yet. However, the final form will be determined during the project and will be chosen so that it best contributes to achieving the desired interaction between the parents in combination with the desired end result of increasing the number of times, duration and quality of the play children with and without disabilities engage in together. Examples of possible forms of the end results would be a product or product-service system.

The end result will be manifested using a testable prototype in order to determine whether the desired goal has been (partially) reached.

For my medisign specialisation, it is important that there is a focus on the physical, emotional and social development of children with disabilities. Playing together with able-bodied peers greatly contributes to these forms of development. On top of that, increasing the amount of time children with disabilities spend outside and increasing the number of social interactions they have will increase their quality of life. Lastly, increasing (positive) contact between (parents of) children with and without disabilities will positively influence the normalisation of people with disabilities and their participation in society, thus positively influencing their overall well-being. As mentioned before, this project will also serve as inspiration for further research on this topic. On top of that, if possible I would like to decrease the worries/stress of parents of children with disabilities when the child plays outside to increase the parent's wellbeing.

PLANNING AND APPROACH ✷✷

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date ___3___ - ___7___ - ___2023___   ___22___ - ___12___ - ___2023___   end date
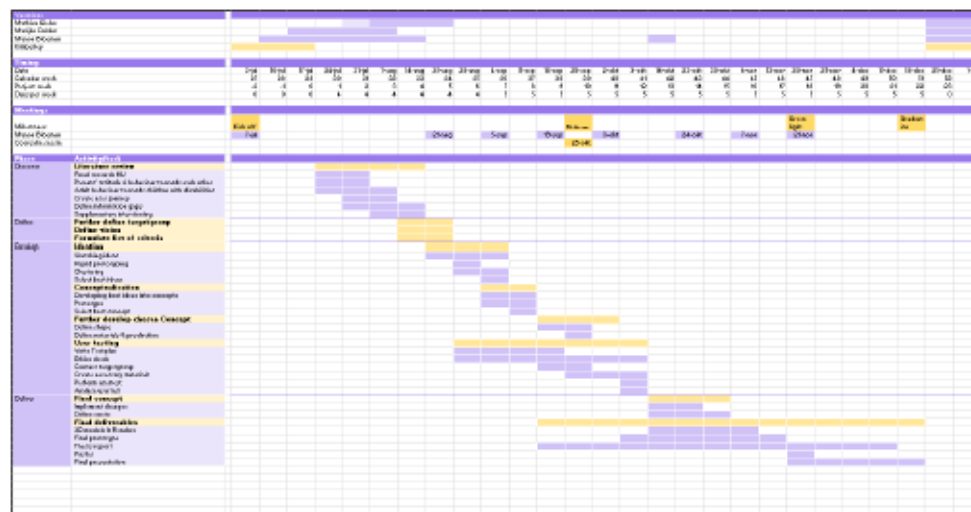
An online version of this Gantt Chart can be found through the following link:
https://docs.google.com/spreadsheets/d/1Kt_LwW4ES1rrVBk3qzgWw7fwWT8Ikhzo/edit?
usp=sharing&ouid=108825560939590496887&rtpof=true&sd=true

I prefer to set up my project planning based on the double diamond method. This allows me to first discover the context, stakeholders and issues before further defining the problem and solution space. When the problem, requirements and vision are further defined the development phase can be started. In this phase ideation, followed by conceptualization, will take place. Once the best concept has been selected, it will be further refined. Afterwards, a user test will be conducted using a prototype to evaluate the concept. From this, possible areas for improvement can also be determined. Lastly, in the deliver phase, the design will be finalized and all required deliverables will be made/finished.

Initials & Name _____   Student number _____

Title of Project   Enabling inclusive play by facilitating parental contact _____

During my Bachelor End Project, I focused on designing an inclusive playground. During this project, I learned about the many different ways in which children with disabilities are restrained when it comes to playing outside and/or together with others. As someone who fondly looks back on my childhood memories of playing outside with others, this had a large impact on me. I highly believe that every child should have the ability to play (with others) without restrictions. Especially as it has such a large influence on children's development and quality of life. Consequently, this started my interest in designing for inclusivity and play. During my master, I also developed an interest in medisign with a focus on well-being and improving quality of life. All in all, this graduation project is a combination of these interests that will hopefully allow me to have a positive impact on the life of children with disabilities.

During this project, I would like to prove my competencies in prototyping and testing. I want to do this through a large final prototype and user test but I also want to use quick and dirty prototypes to test smaller elements of the design. One way of prototyping is visual communication: design sketching, creating 3d models and rendering these models. Though I technically already poses these skills (as I have been taught this throughout my bachelor's and IPD master's), I would like to improve these skills. Especially, as I have never truly employed them in my projects through my own free will.

Considering I am an IPD student, I have been very focused on the technical aspects of designing a product, rather than the interactions it can evoke. However, I think that design for interaction can play a large role in achieving the desired end goal of a project. Therefore, I would also love to learn more about interaction design.

Lastly, throughout my IPD master's, I followed the medisign specialisation and learned about healthcare and wellbeing. I would like to prove what I have learned in this project, but as the medisign field is very vast, I would also like to still broaden my horizons during this project.

Appendix B: Topic list for transcript analysis of the genaritive focus groups

A broad topic list was chosen to help define barriers, opportunities and parts of the knowledge gap between PCwD and PCwTD that might be part of tacit knowledge or only become evident when looked at in the broader context.

On top of the topic list below, any quotes that were deemed to be of interest by the researcher were selected.

Topic list:

PCwD

- Role PCwD in visiting the playground
  - o Role in deciding to visit a playground and factors of influence on PCwD
  - o Role at the playground: Behaviour, attitudes, values
- Role PCwD in stimulating (or hindering) CwD's play
- Feelings experienced at the playground by PCwD
- Relation between PCwD and PCwTD

PCwTD

- Opinions/attitude/feelings and emotions towards CwD
- Behaviour towards CwD and PCwD
- Influence PCwTD on CwTD
- Values of PCwTD for children's play and parental playground relationships

Contextual barriers

- Factors that prevent CwD and PCwD from visiting the playground
- Factors that prevent CwD and CwTD from playing together
- The influence child therapists (can) have on inclusive play
- The knowledge gap between PCwD and PCwTD

Autonomy

- General level of autonomy CwD and CwTD at the playground
- Autonomy in inclusive play
- Importance of autonomy

Inclusive play

- Factors needed for inclusive play
- The influence of inclusive play on CwD and CwTD

Appendix C: Context map without statement cards

Appendix D: Topic list Chapter 3.1

Mistakes

- Ways people w/o disabilities treat PwD that are marked as:
    o Incorrect
    o Frustrating
    o Miscommunications
    o Misunderstandings
    o Problems caused by a lack of knowledge.
    o Having a part in or inducing barriers

The Knowledge gap

- Knowledge people w/o disabilities are missing or that is incorrect
- Incorrect ways of handling PwD based on missing or incorrect knowledge
- Knowledge that is marked as important by the experts
- Misconceptions/lacking understanding about PwD's capabilities
- Misconceptions/wrong ideas/lacking understanding about PwD's needs

Ways of working with CwD

- Situations that should be handled differently by people w/o disabilities
- Ways of working of people w/o disabilities that should be or are adjusted

Role of experts

- General ways of working with PwD and without
- Interventions/techniques used to reduce barriers, mistakes and misconceptions
- The effect of their techniques

Appendix E: Statement cards & clusters Chapter 3.1

Statement cards:

Row 1:

PwD are percieved as different

"Als mensen iemand in een rolstoel zien dan kijken ze daar op een bepaalde manier naar omdat het anders is."

People are unaware of the effect they have when they percieve a CwD as different
----
"en ik denk dat die bewust wording er ook moet komen dat als anders gezien worden, anders is, dan daadwerkelijk anders zijn."

CwD are seen as different and therefore it is assumed that they need to be treated differently as well
----
"Ze zien dat meisje als anders en daarom denken ze ook direct dat ze niet mee kan doen met de gymles of dat ze een andere soort 'gymles', in dit geval fysiotherapie, nodig heeft."

PCwRD see CwD as different eventhough CwRD often do not mind or even notice this possible difference.

"Want wij vinden het raar, wij vinden er iets van, maar die kinderen niet hoor, die boeit het niks. Voor hun zijn ze niet anders."

CwD are often excluded/issolated as they are seen as unable to perform activities for CwRD

"Ik ging naar een school en daar was een meisje met een dwarslaesie en die zat dus in een rolstoel en als de klas gymles had dan ging zij oefenen met de fysiotherapeut."

Row 2:

People often stare at PwD

"En mensen staren naar me als ik naar de supermarkt ga. Dat was niet zo voordat ik in een rolstoel zat en ze staren niet omdat ik zo knap ben."

CwD are often seen as different, even if they are not

"Maar daar kwam ik er wel achter dat hij 'anders was' omdat mensen naar hem staarden en anders naar hem keken. Hij werd als anders gezien terwijl hij dat niet was."

[illegible small text card]

Often the CwD is stimulated to adapt, but I encouraged CwRD to adapt to him
----
"Maar wat ik gedaan heb is, ik heb het omgedraaid. In plaats van te kijken naar hoe hij zich aan kon passen aan de rest, hoe de rest zich aan hem aan kon passen."

Showing what a PwD is capable of can change people's opinions/attitudes.

"Ik vraag altijd wat mensen van me denken en dan zeggen ze dat ze me zielig vinden of medelijden met me hebben. En achteraf vraag ik het nog een keer en dan zeggen ze dat ik stoer en sterk ben."

Row 3:

Talking about disabilities is the most important step towards change
----
"Ik denk echt, ik geloof echt, dat het gesprek aangaan de belangrijkste stap is. Want het gaat natuurlijk om die beeldvorming en zonder het er over te hebben kan je daar niks aan veranderen."

Allowing CwRD to experience a 'disability' can change their perception
----
"Maar wat doe ik? Ik ga met heel veel rolstoelen naar een school en zet iedereen in een rolstoel. En bijna iedereen vindt het direct leuk."

Adults explain to CwRD what disability a CwD has and what that means.

"Dus daarna vroeg ik of hij wist dat dat jongetje autisme had en of hij wist wat autisme is. Hij wist dat niet dus ik heb een beetje uitgelegd wat het was."

Talking about disabilities is the most important step towards change
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"Ik denk echt, ik geloof echt, dat het gesprek aangaan de belangrijkste stap is. Want het gaat natuurlijk om die beeldvorming en zonder het er over te hebben kan je daar niks aan veranderen."

Visible disabilities make it possible to talk about the disability and the associations with it
----
"Al en toe ben ik ook gewoon blij dat ik in een rolstoel zit, dan is het tenminste zichtbaar en dan kan je het er ook sneller over hebben. Dat is makkelijker te bespreken en begrijpen dan wanneer het niet zichtbaar is."

Row 4:

Adults explain to CwRD what disability a CwD has and what that means.

"Dus daarna vroeg ik of hij wist dat dat jongetje autisme had en of hij wist wat autisme is. Hij wist dat niet dus ik heb een beetje uitgelegd wat het was."

Every CwD needs a personal approach as they are all different
----
"Het is allemaal maatwerk. Iedereen is anders en heeft andere behoeften. Daarom kijken we altijd samen met de client en de sportclub wat er nodig is en wat er geregeld kan worden."

Every CwD is different even if they have the same disability

"Dat verschilt per keer. Bijvoorbeeld bij iemand met autisme, wat vinden ze fijn, wat hebben ze nodig. De een moet maar 1 opdracht of taak per training krijgen, de ander 1 positie in het veld. Vinden ze het fijn om rustig toe gesproken te worden of moeten ze soms even naar de kant? Wij kijken samen wat ze nodig hebben en fijn vinden en hoe we dat kunnen regelen."

Showing what a PwD is capable of can change people's opinions/attitudes.

"Ik vraag altijd wat mensen van me denken en dan zeggen ze dat ze me zielig vinden of medelijden met me hebben. En achteraf vraag ik het nog een keer en dan zeggen ze dat ik stoer en sterk ben."

The (first) associations and mental images made of disabilities are often negative
----
"... en dat heeft heel veel te maken met de eerste associaties en denkbeelden en die zijn vaak niet positief."

Row 5:

PCwRD see CwD as different eventhough CwRD often do not mind or even notice this possible difference.

"Want wij vinden het raar, wij vinden er iets van, maar die kinderen niet hoor, die boeit het niks. Voor hun zijn ze niet anders."

People often stare at PwD

"En mensen staren naar me als ik naar de supermarkt ga. Dat was niet zo voordat ik in een rolstoel zat en ze staren niet omdat ik zo knap ben."

[illegible small text card]

People often want to provide unasked for help

"Mensen willen me ongevraagd helpen. En dan denk ik nee. Laat me het eerst zelf proberen en als het dan niet lukt dan vraag ik wel om hulp."

People are unaware of the effect they have when they percieve a CwD as different
----
"en ik denk dat die bewust wording er ook moet komen dat als anders gezien worden, anders is, dan daadwerkelijk anders zijn."

Clusters:

Adults are often unaware of PwD, causing them to exhibit incorrect behaviour towards PwD when they do meet.

People are unaware of the effect they have when they percieve a CwD as different

----

"en ik denk dat die bewust wording er ook moet komen dat als anders gezien worden, anders is, dan daadwerkelijk anders zijn."

People are unaware of PwD and only start thinking about them when they are confronted with a similar situation or a PwD.

"Dat is ook iets wat ik me afvraag, is het het negeren van beperkingen of is het het onbewust zijn er van, het niet weten?" "Ja, het onbewust zijn, zodra ze er mee geconfronteerd worden gaan ze er over nadenken en komt er een bewustwording, bijvoorbeeld als ik op een school kom en het lokaal is op de tweede verdieping maar er is geen lift. Dan denk ik zodra ze er mee geconfronteerd worden gaan ze pas over na denken."

People often want to provide unasked for help

"Mensen willen me ongevraagd helpen. En dan denk ik nee. Laat me het eerst zelf proberen en als het dan niet lukt dan vraag ik wel om hulp."

People often stare at PwD

"En mensen staren naar me als ik naar de supermarkt ga. Dat was niet zo voordat ik in een rolstoel zat en ze staren niet omdat ik zo knap ben."

Talking about the disability is an important step towards creating understanding

Adults explain to CwRD what disability a CwD has and what that means.

"Dus daarna vroeg ik of hij wist dat dat jongetje autisme had en of hij wist wat autisme is. Hij wist dat niet dus ik heb een beetje uitgelegd wat het was."

Talking about disabilities is the most important step towards change

----

"Ik denk echt, ik geloof echt, dat het gesprek aangaan de belangrijkste stap is. Want het gaat natuurlijk om die beeldvorming en zonder het er over te hebben kan je daar niks aan veranderen."

Visible disabilities make it possible to talk about the disability and the associations with it

----

"Af en toe ben ik ook gewoon blij dat ik in een rolstoel zit. Dan is het tenminste zichtbaar en dan kan je het er ook sneller over hebben. Dat is makkelijker te bespreken en begrijpen dan wanneer het niet zichtbaar is."

Every CwD is different even if they have the same disability

Every CwD is different even if they have the same disability

"Dat verschilt per keer. Bijvoorbeeld bij iemand met autisme, wat vinden ze fijn, wat hebben ze nodig. De ene moet maar 1 opdracht of taak per training krijgen, de ander 1 positie in het veld. Vinden ze het fijn om rustig toe gesproken te worden of moeten ze soms even naar de kant? Wij kijken samen wat ze nodig hebben en fijn vinden en hoe we dat kunnen regelen."

Every CwD needs a personal approach as they are all different

----

"Het is allemaal maatwerk. Iedereen is anders en heeft andere behoeften. Daarom kijken we altijd samen met de client en de sportclub wat er nodig is en wat er geregeld kan worden."

CwD are subjected to stereotypes, stigmas and attitudes by adults

PCwRD see CwD as different eventhough CwRD often do not mind or even notice this possible difference.

"Want wij vinden het raar, wij vinden er iets van, maar die kinderen niet hoor, die boeit het niks. Voor hun zijn ze niet anders."

The (first) associations and mental images made of disabilities are often negative

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"... en dat heeft heel veel te maken met de eerste associaties en denkbeelden en die zijn vaak niet positief."

Showing what a PwD is capable of can change people's opinions/attitudes.

"Ik vraag altijd wat mensen van me denken en dan zeggen ze dat ze me zielig vinden of medelijden met me hebben. En achteraf vraag ik het nog een keer en dan zeggen ze dat ik stoer en sterk ben."

There are different ways in which PCwD and experts try to create understanding and connection between CwRD and CwD.

Adults explain to CwRD what disability a CwD has and what that means.

"Dus daarna vroeg ik of hij wist dat dat jongetje autisme had en of hij wist wat autisme is. Hij wist dat niet dus ik heb een beetje uitgelegd wat het was."

Talking about disabilities is the most important step towards change

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"Ik denk echt, ik geloof echt, dat het gesprek aangaan de belangrijkste stap is. Want het gaat natuurlijk om die beeldvorming en zonder het er over te hebben kan je daar niks aan veranderen."

Often the CwD is stimulated to adapt, but I encouraged CwRD to adapt to him

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"Maar wat ik gedaan heb is, ik heb het omgedraaid. In plaats van te kijken naar hoe hij zich aan kon passen aan de rest, hoe de rest zich aan hem aan kon passen."

Allowing CwRD to experience a 'disability' can change their perception

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"Maar wat doe ik? Ik ga met heel veel rolstoelen naar een school en zet iedereen in een rolstoel. En bijna iedereen vind het direct leuk."

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"Ik vraag altijd wat mensen van me denken en dan zeggen ze dat ze me zielig vinden of medelijden met me hebben. En achteraf vraag ik het nog een keer en dan zeggen ze dat ik stoer en sterk ben."

Giving CwRD the responsibility to play with a CwD.

"Er waren een paar hele dominante jongens en het viel en ik wist zoiets jij dat hij een van die jongens wel zou gooien had omdat ze in dezelfde straat wonen. Dus toen het wil ze gegaan en heb aan die dominante jongen gevraagd kan jij hem? Heb ik hem drie eens gezien? Dus toen te vroeg ik of hij wist dat dat jongetje autisme had en of hij wist wat autisme is. Hij wist dat niet dus ik heb een beetje uitgelegd wat het was en of hij, ook balans met hem wilde trappen op het veld. En hij wilde graag helpen dus dat hebben ze gedaan..."

Making use of the strenths of CwD can provide options for inclusive play and empower CwD

"Dus ik heb toen allemaal rolstoelen meegenomen en voor iedereen samen een gymles gegaven. Ik ben toen begonnen met iedereen op 1 lijn te zetten en ze heen en weer te laten rollen. En wat denk je? Zij zat in een elektrische rolstoel dus zij stond allang achter de lijn te wachten terwijl de rest nog moest gaan draaien. Ze had zo'n grote lach."

CwD are percieved as different (even if they are not)

CwD are often seen as different, even if they are not

"Maar daar kwam ik er wel achter dat hij 'anders was' omdat mensen naar hem staarden en anders naar hem keken. Hij werd als anders gezien terwijl hij dat niet was."

CwD are often excluded/issolated as they are seen as unable to perform activities for CwRD

"Ik ging naar een school en daar was een meisje met een dwarslaesie en die zat dus in een rolstoel en als de klas gymles had dan ging zij oefenen met de fysiotherapeut."

PCwRD see CwD as different eventhough CwRD often do not mind or even notice this possible difference.

"Want wij vinden het raar, wij vinden er iets van, maar die kinderen niet hoor, die boeit het niks. Voor hun zijn ze niet anders."

People often stare at PwD

"En mensen staren naar me als ik naar de supermarkt ga. Dat was niet zo voordat ik in een rolstoel zat en ze staren niet omdat ik zo knap ben."

CwD are seen as different and therefore it is assumed that they need to be treated differently as well

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"Ze zien dat meisje als anders en daarom denken ze ook direct dat ze niet mee kan doen met de gymles of dat ze een andere soort 'gymles', in dit geval fysiotherapie, nodig heeft."

PwD are perceived as different

"Als mensen iemand in een rolstoel zien dan kijken ze daar op een bepaalde manier naar omdat het anders is."

People are unaware of the effect they have when they percieve a CwD as different

----

"en ik denk dat die bewust wording er ook moet komen dat als anders gezien worden, anders is, dan daadwerkelijk anders zijn."

Appendix F: Preliminary list of requirements and wishes based on desk and field research

The full list of requirements and wishes based on the literature and desk research in chronological order:

Requirements	Chapter
The product has to address attitudinal barriers	2.2
The product has to be suitable for children with visible disabilities and their parents	2.2
The product has to increase direct experience	2.3
• To create an accessible attitude that increases behaviour-attitude consistency	2.3
• To create first hand situations in which misconceptions are dispelled thus influencing the cognition component of attitude.	2.3
• To increase awareness of CwD	2.4 + 3.1
• To reduce stigma	3.1
• To decrease the need to talk about the CwD's disability	3.3
The product has to provide a feeling of security for PCwD	2.4
The product has to stimulate the human need of morality for PCwD and PCwTD	2.4
The product should stimulate contact but not force contact between PCwD and PCwTD (human need of autonomy)	2.4
The product has to be suited for CwD and CwtD between the developmental age of 4 to 6	2.4
The product has to facilitate a flexible and adaptable type of play allowing for a personal approach	2.4
The product has to be suited for CwD attending special education	2.4
The product has to address PCwTD who have a weakly held attitude	2.4
The product has to stimulate PCwD to take a step away from the children's play	2.4
The product has to increase PCwTD's attitude in a positive way	2.4 + 3.1
The product has to show similarity between CwD and CwTD	3.1
The product has to provide a lead for conversation between PCwD and PCwTD	3.2

Wishes	Chapter
The product should also teach PCwTD through PCwD teaching CwD and CwTD about inclusive play	2.4
The product should help PCwTD and PCwD to teach CwTD to play inclusively	2.4
The product should increase CwTD's attitude in a positive way	2.4
The product should help PCwTD to set a good example for CwTD	2.4
The product should help PCwTD to correct CwTD's behaviour when needed	2.4
The product should stimulate the human need of impact for PCwD	2.4
The product should stimulate the human need of competence for PCwTD	2.4
The product should stimulate the human need of ease for PCwTD	2.4
The product should use non-verbal tactics to stimulate contact and inclusive play	3.1
The product should stimulate repeated contact between PCwTD, PCwD, CwTD and CwD	3.2

Appendix G: Full list of requirements and wishes

Requirements	Chapter
The product has to be usable in outdoor areas	Design brief
The product is not allowed to make use of time pressure, to increase unbiased judgement (especially in case of originally negative attitudes)	(Fazio & Roskos-Ewoldsen, 2005)
The product has to be usable at every playground/playspace (transportable)	Vision
The product has to address attitudinal barriers	2.2
The product has to be suitable for children with visible disabilities and their parents	2.2
The product has to increase direct experience • To create an accessible attitude that increases behaviour-attitude consistency • To create first hand situations in which misconceptions are dispelled thus influencing the cognition component of attitude. • To increase awareness of CwD • To reduce stigma • To decrease the need to talk about the CwD's disability	2.3 + Vision 2.3 2.3 2.4 + 3.1 3.1 3.3
The product has to provide a feeling of security for PCwD	2.4
The product has to stimulate the human need of morality for PCwD and PCwTD	2.4
The product should stimulate contact but not force contact between PCwD and PCwTD (human need of autonomy)	2.4
The product has to be suited for CwD and CwtD between the developmental age of 4 to 6	2.4 + Vision
The product has to facilitate a flexible and adaptable type of play allowing for a personal approach	2.4
The product has to be suited for CwD attending special education	2.4
The product has to address PCwTD who have a weakly held attitude	2.4
The product has to stimulate PCwD to take a step away from the children's play	2.4 + Vision
The product has to increase PCwTD's attitude in a positive way	2.4 + 3.1
The product has to show similarity between CwD and CwTD	3.1
The product has to draw attention to the ability rather than the disability of a CwD.	2.4 + 3.1
The product has to provide a lead for conversation between PCwD and PCwTD	3.2
The product has to stimulate PCwTD and PCwD to teach CwTD to play inclusively	2.4 + Vision
The product has to take up little to no prior parental time investment • The product has to be easily learnable: The product should require a maximum learning time of 2 minutes. • The product has to be easy to pick up (e.g. at places the parent visits already)	2.4
The product should help parents give input for children to develop ways for inclusive play but should not stimulate parents to continuously lead the entire play. (there should be a balance between child and parent initiative)	Vision
The product has to be usable with only 1 parent and their child/children (to allow a child with a disability to get used to it)	5.3
The product has to be non-toxic to children	
The product has to be cleanable and hygienic	
The product is not allowed to contain any lose parts smaller than 3 by 6 cm to prevent swallowing and chocking hazard	

The product must survive a fall of a minimum of 0.5 meters	

Wishes	**Chapter**
The product should create a positive subjective norm regarding disabilities/inclusive play within a neighbourhood.	2.3
The product should be playable without prior instructions	2.4
The product should also teach PCwTD through PCwD teaching CwD and CwTD about inclusive play	2.4
The product should increase CwTD's attitude in a positive way	2.4
The product should help PCwTD to set a good example for CwTD	2.4
The product should help PCwTD to correct CwTD's behaviour when needed	2.4
The product should stimulate the human need of impact for PCwD	2.4
The product should stimulate the human need of competence for PCwTD	2.4
The product should stimulate the human need of ease for PCwTD	2.4
The product should use non-verbal tactics to stimulate contact and inclusive play	3.1
The product should stimulate repeated contact between PCwTD, PCwD, CwTD and CwD	3.2
The product should require as little phone usage at the play space as possible.	3.2

Appendix H: Rephrasing sub-elements of the vision in how to questions

Rephrasing the sub-elements:

The design should stimulate contact between PCwTD and PCwD.
→ How to initiate or stimulate the first contact between people?

Help the parents to give input for inclusive play.
→ How to facilitate (inclusive) play?

Help parents step away from the play.
→ How to guide parents to take a step back from their children's play?

On top of that, 3 extra questions were formulated that could be used as further inspiration:

For parents to feel closer to each other and to be wanting to see each other again a sense of belonging/relatedness can have a positive influence. Especially as PCwD can feel unwelcome or out of place at playgrounds due to staring.
→ How to create a sense of belonging/relatedness between parents?

One of the parents in Chapter 3.3 mentioned that it can be difficult when others ask questions about the disability of your child as you might not have the answers yet yourself. For such situations guiding conversations can be of help.
→ How to guide conversations?

The focus groups of Chapter 2.4 mentioned that children tend to have a bit of a one track mind when it comes to playground equipment and games: You're supposed to use it in a specific way which creates a harsh criterium for being able to play 'correctly'. They also mentioned that fantasy play is a solution for this as it is a very flexible and adaptable type of play and therefore more suitable for different types of disabilities.
→ How to facilitate fantasy play?

Appendix I: Brainstorm idea clusters

Spontaneous conversation

An object or institution that connects people

Using body language

How to stimulate/ initiate the first contact

Creating an environment where everyone is new

An object that stimulates spontaneous connecting

Target based play

bots different pieces of the puzzle

Target based

Introducing a restriction/ 'handicap' to the play

bots different pieces of the puzzle
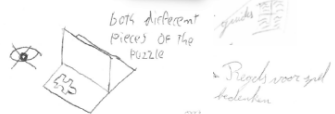
An object that can be used in different ways

modular toys based on physical capabilities

How to facilitate (inclusive) play for children?

Collaborative play

GEEN AFVALRACE

Open ended play (o rules)

Built your own inclusive play sets

Ronde 1: spelelementen leveren!

Signal the parents to take a step back

Create a physical distance

Putting parents at ease

Stimulate conversation between parents

How to help parents take a step back from their children's play?

Distracting the parents by introducing a seperate play for them

Parents are physically unable to remain in the play

Explain to parents that children need some alone time during play

Experiencing something together

"De voetbalouders" van de wijk

carpool systeem voor kinderen brengen en halen

[handwritten, partly illegible] ... samen een spel spelen

... op school. [illegible]

Talking about the children

"what would my kid do" cards

Roddelen (over je kind/partner)

kind vergelijken.

Connecting through food

Straat BBQ

koffie & [illegible] voor ouders

recepten uitwisselen.

[illegible]

How to create belonging/ relatedness between parents?

Finding and talking about commonalities

praten over [illegible] tijd. kind vergelijken.

praten over je beperking [illegible]

"what would my kid do" cards

find common interests

Talking in general

Roddelen (over je kind/partner)

hallo zeggen, [illegible]

Creating a returning activity based on common interest

Ouders hebben ook vrienden nodig

De boekenclub / filmclub / cosplayers / De voorleesclub!

z

How to guide a conversation?

Food is an easy conversation starter and a topic for conversation

Samen eten
meer straat BBQ met salades etc.

Share a beverage

recepten uitwisselen.

Creating a returning conversation moment

Het klaaguurtje

Doe het maandelijks

KB

Getting parents to experience something new together so they can talk about that

samen iets nieuws doen / nieuwe ervaringen.

Performing an activity they can talk about

lego:

bestjes potten   Role Playing

iets doen tijdens gesprek.

VR / AI / metaverse / Minecraft

Providing conversation topics

app met anderen over gespreks onderwerpen

gespreks onderwerpen op tafel leg.

kaarten spel.
VR / AI / metaverse / Minecraft

Conversation cards

Finding commonalities to talk about

Find common hobbies

Waar zou jij met je kind naartoe gaan?

roddelen

elkaar volgen op sociaal media.

recepten uitwisselen.

Turning conversing into a game

Role Playing

kaarten spel.

build a conversation chain

Getting parents to experience something new together so they can talk about that

Creating a returning conversation moment

Food is an easy conversation starter and a topic for conversation

Het klaaguurtje

Doe het maandelijks
(KB)

Performing an activity they can talk about

How to guide a conversation?

Providing conversation topics

Turning conversing into a game

Finding commonalities to talk about

Role Playing

build a conversation chain

Being taught creativity techniques

Acting something out

Manipulating materials

Freedom to express yourself

A (digital) fantasy environment

How to stimulate fantasy (play)?

Construction play

Finding solutions to questions or problems

Creating a story

Appendix J: Play Date

Full explanation play date:

Scheduling a play date:

The scheduling part of the play date app is accessible to everyone and can match parent-child couples who do not know each other within a neighbourhood to schedule a play date. This provides a lead for PCwD and CwD to connect with others in their neighbourhood as they often do not know a lot of people there (Chapter 2.4). On top of that, it helps to prevent parents from being alone at the playground with their children (Chapter 3.2).

As the app will be available to everyone it allows for wide advertising and allows the advertising to not lay the focus on CwD. Namely because focusing on solely matching CwD and CwTD will decrease the target audience of the app and cause there to be a focus on the disability of the children even though they just want to be perceived and treated as normal (Chapter 2.4).

Play date extension for PCwD: Objects

As mentioned before the scheduling part of the app is accessible to everyone, however, there is an addition to the app for PCwD. PCwD can pick up play objects at their local toy library, physiotherapist etc. that can be used when meeting up for the play date.

The play objects are oddly shaped objects with different sizes, weights, colours, textures, sounds, etc. They are undefined objects and therefore stimulate exploratory play. Exploratory play is something every child is capable of (Muentener, Herrig& Schulz, 2018; Pelz & Kidd, 2020).

Children's social-emotional development related to play happens in a set order starting with solitary play followed by parallel, associative and cooperative play. Around the DA of 4 to 6, children's play development reaches the stage where they start to learn to play together (associative play followed by cooperative play) (Parten, 1932; Rubin, 1977;). However, some children may be a bit behind in their play development and thus still have difficulty with playing together. They can be guided into more social play by stimulating this. Magnets are placed within the objects to allow them to respond differently to each other. On top of that, they all have different properties. The children will be guided to play together as they want to find out about the properties and capabilities of the other objects. As well as how they respond to each other.

This stimulates collecting the objects, resulting in the children wanting to share the objects or 'fighting' over them (Chapter 3.2). This will allow the parents to observe that the children are capable of playing together or they can teach their children about playing together. This provides a moment for the parents to connect on what they value during inclusive play and how you handle such a situation when a CwD is involved: E.g. do you treat the CwD differently than the CwTD when correcting them?

Play date extension for PCwD: App

The app has an extension for PCwD that stimulates the parents to enrich the play based on the children's interests. It does this by asking questions about the children's shared interests and providing tips on how to use these for the play. This allows the parents to discuss the similarities between the children also stimulating feelings of relatedness.

The other questions focus on how to guide the play towards different kinds of exploration. Helping the parents to find a type of play suited for both children.

Prototype of app interface:

Play date

Ontmoet andere ouders en
kinderen in jouw omgeving

Login

of

Sign up

Sign up

Naam

Locatie / wijk

Email

Wachtwoord

Herhaal wachtwoord

Sign up

Kies favoriete speeldag(en)

Ma Di Wo Do Vr Za Zo

Of vul de kalender in

oktober

Ma	Di	Wo	Do	Vr	Za	Zo
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

U heeft een speel uitnodiging

Dag: Zaterdag 14-10

Tijd: 14:00

Locatie: Lange straat 12

Accepteren   Weigeren

Vandaag is je speel afspraak

Veel plezier!

Tijd: 14:00

Locatie: Lange straat 12

Wil je deze ouder nog eens ontmoeten?

Ja

Misschien

Nee

Part of the app accessable to everyone

— — — — — — — — — — — — — — — —

Part of the app only accessable for PCwD

Hoe kunnen jullie het spel verrijken?

Wat zou je toe kunnen voegen
aan het spel van de kinderen?

Gedeelde interesses?

Manier van organiseren?

Manier van bouwen?

Type spel?

Hoe kunnen jullie het spel verrijken?

Wat zou je toe kunnen voegen
aan het spel van de kinderen?

Gedeelde interesses?

Hebben de kinderen gedeelde
interesses? Denk bijvoorbeeld aan
piraten of monsters. Kunnen ze het
speelgoed gebruiken in een
fantasiespel met dit thema?

Manier van organiseren?

Wat hebben de kinderen al ontdekt
en hoe gaan ze met elkaar en het
speelgoed om? Kunnen ze samen het
speelgoed organiseren op
verschillende wijzen? Denk
bijvoorbeeld aan de geluiden die het
speelgoed kan maken.

LoFi interaction scenario:

App available and usable for everyone

| Play date app | • Location
• Preferred play day(s)
• Child's interests | It's a match: Sunday at xxx location | Meet up |
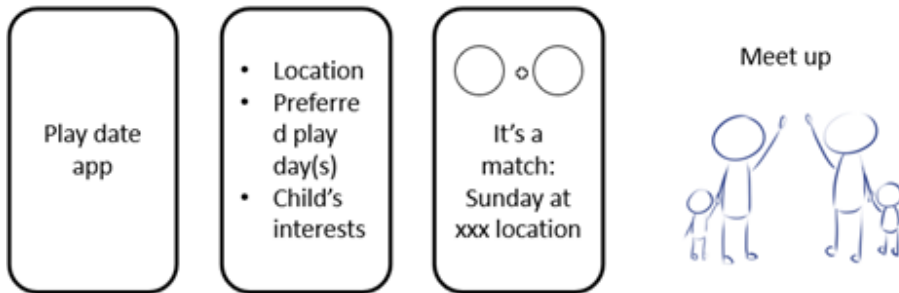
Extra play objects that can be lent/bought by parents of children with impairments and can be linked to the app

How can you enrich their play?

suggestions

Lofi prototypes:

Oddly shaped objects that make different sounds and some attract each other due to magnets. The prototypes were used during the interviews in Chapter 6.2.

Appendix K: Build a day

Full explanation build a day:

Build a day allows PCwD to fill out some information about the play day online (for example the date and playground). They can then print the flyers and hang them up in their neighbourhood. The flyers invite other parents and children to participate in an outdoor play day with loose parts.

The flyer also contains a QR code that provides more information about the value of loose parts play, what materials you can bring with you, how the play day will proceed and photos that give an impression of the play day.

PCwD can then pick up a toolkit from the play library, physiotherapist, etc. This saves them time and ensures that there are always sufficient materials to build a play environment during the play day, even if other people don't bring loose parts.

On the day itself, parents and children from the neighbourhood meet each other and the parents build the play environment for the children using the loose parts and toolkit they brought. By discussing the children's interests and finding similarities between them (Chapter 3.2), parents can determine what kind of environment they will create. As explained before, this highlights the similarity between CwD and CwTD. On top of that, in the case of physical disabilities, the parents are provided a lead to talk about the placement and size of certain aspects within the environment they are building. E.g. 'How wide should the doorway be for everyone to be able to enter?' and 'Do you think this height is safe for everyone to climb on?'. This way PCwTD can learn about the needs and capabilities of the CwD by asking less direct questions about the disability (Chapter 3.3).

By working together to build the environment the parents experience something new together stimulating a sense of relatedness and community. Also providing conversation leads for socialising after the environment has been built. By providing a way to enrich the playground experience for children, the CwD and PCwD now bring an added value to the playground, stimulating PCwTD and CwTD to join even if they think the CwD is 'odd' at first sight.
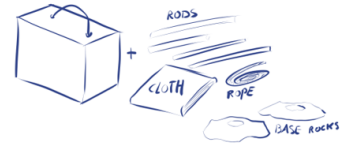
Build a day creates an environment using loose objects that can be used to facilitate different types of play. For example, pretend and reenactment types of play but it could also provide opportunities for deep play, something CwD often do not get to experience due to the overprotectiveness of parents (Chapter 2.4).

LoFi interaction scenario Buid a day:

Come and join us on the children's play day on Sunday, October 1st! For more information scan the QR code.

Flyer with a base text where you can change the date and location
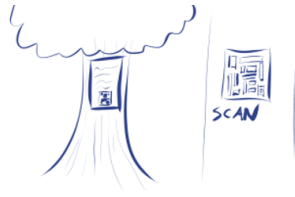
SCAN

Website showing video of the event and explanations on what to bring and do

RODS
CLOTH
ROPE
BASE ROCKS

To save time, parents with children with impairments can buy or lend a box with base materials

Meet up on the designated day
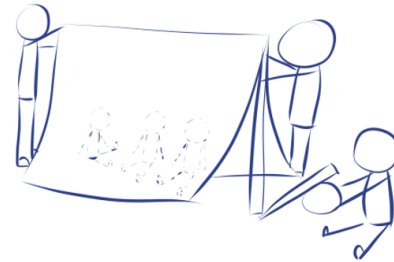
Build

Visualisation of Build a day elements:

loosepartsplay.be

LOOSE PARTS PLAY

HOME   BLOG   ONDERSTEUNING   TRAINING SPEELEXPERT   LOOSE PARTS KOPEN   VISIE   CONTACT

NIETS WORDT ALLES.

Materiaal met een open einde, dat kinderen zelf invullen, vastpakken, verzamelen, verplaatsen en ontdekken. Geen klassiek speelgoed, maar alles wat in de echte wereld te vinden is.

Stap mee in het verhaal van loose parts play!

LAAT JE INSPIREREN →

Build a day flyer:

Buurt speeldag!

Kom en doe mee meet de buurt speeldag op **[datum en tijd]** bij speeltuin **[locatie / speeltuinnaam]**!

Waarom zou je mee doen?

- Geef de kinderen een speelkans die ze niet zullen vergeten
- Ontmoet andere ouders
- Leer nieuwe mensen uit de wijk kennen

Wat mee te nemen?

- Losse onderdelen, denk aan steentjes, balken, kratten, etc. (zie qr-code)

Scan de QR code voor meer informatie!

Appendix L: Story time

Full explanation Story time:

Story time consists of a sensory rug that provokes spontaneous interaction by attracting the attention of bystanders through its bright colours and textures. A physical invitation sign encourages PCwTD and CwTD to ask what the game is and whether they can participate.

Parents can tell a story to the children by together choosing a theme that matches the children's shared interests (Chapter 3.2). The parents then try to tell a story together guided by the story cards that they take turns drawing. Allowing parents to work together can stimulate a sense of solidarity and therefore relatedness.

While parents select the cards and tell the story, the textures of the rug encourage children to engage in exploratory sensory play.

The children can then set up their own game based on the story told by their parents. Possible forms of play include acting out the story or looking for attributes in the environment to enrich the story. This creates a time for the parents to converse, and get to know each other and their children a little while monitoring the play.

The rug will also be available at regular primary schools to encourage PCwTD to also bring it to the playground. This will create more play opportunities for CwD at regular playgrounds without the need for the PCwD to always take the product with them themselves. Thus decreasing the burden on PCwD.
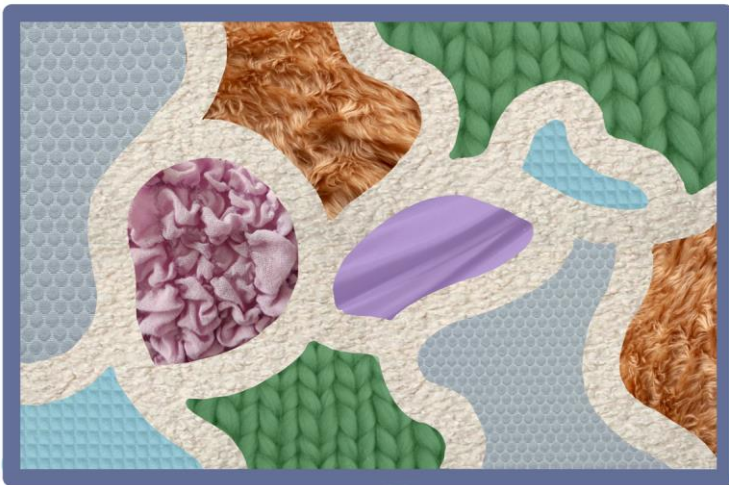
To make sure the concept can easily be transported, it can be folded to form a bag.
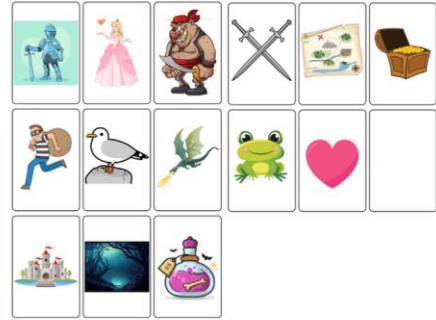
LoFI interaction scenario Story time:
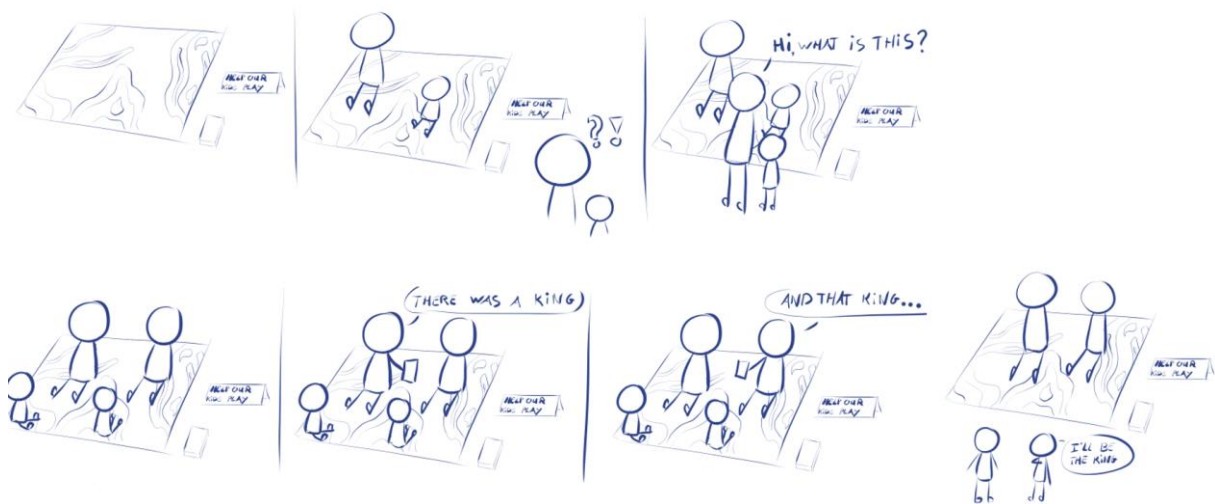
Visualisation of Story time elements:

Story time

Opvouwbaar, draagbaar kleed met verschillende texturen waarin alle andere onderdelen vervoerd kunnen worden

Verhaal kaarten

Uitnodigingsbordje

LoFi tactile prototype of Story time rug:

Appendix M: Conversation Cards of the Voelvlek

Gesprekskaarten Makkelijk Wat is je zoons/dochters favoriete bezigheid? *Waarom vindt hij/zij dat zo leuk?*	**Gesprekskaarten** Makkelijk Waar is je zoon/dochter heel goed in? *Waarom vindt hij/zij dat zo leuk?*	**Gesprekskaarten** Makkelijk Wat is je zoons/dochters favoriete speelgoed? *Waarom vindt hij/zij dat zo leuk?*
Gesprekskaarten Makkelijk Wat is je zoons/dochters favoriete spelletje? *Waarom vindt hij/zij dat zo leuk?*	**Gesprekskaarten** Makkelijk Wat is je zoons/dochters favoriete tv-show? *Waarom vindt hij/zij dat zo leuk?*	**Gesprekskaarten** Gemiddeld Wat vind je fijn in het doen en laten van andere kinderen? *Waarom vind je dat zo fijn?*
Gesprekskaarten Gemiddeld Wat vind je fijn in het doen en laten van andere ouders? *Waarom vind je dat zo fijn?*	**Gesprekskaarten** Gemiddeld Hoe wil je dat de kinderen met elkaar om gaan? *Waarom?*	**Gesprekskaarten** Moeilijk Is er iets wat je zou willen weten over het opvoeden van je eigen kind? *Waarom?*

Gesprekskaarten Moeilijk Hoe vind je het of zou je het vinden als mensen die je niet kent plotseling vragen stellen over je kind? Waarom?	**Gesprekskaarten** Moeilijk Hoe vind je het of hoe zou je het vinden als ouders naar je staren? Waarom vindt hij/zij dat zo leuk?

Appendix N: Detailed results per research question test with children

Plays children came up with:

Some of the plays can be seen in Figures 50 and 51 (diagrams of play phases).
Other plays children came up with are listed below:

- Throw or roll the ball on a colour
  - The colour it ends on determines a task you have to perform (e.g. blue=pretend that you are swimming)
  - If the colour matches the colour of the ball you get a point
    - Variation: throwing from a larger distance
  - You get to feel the texture of the area the ball ends on
  - All balls need to end on the same colour
- Throw or roll the ball from one player to the other
  - Try to catch it
  - The other player makes a circle with their arms and you have to try to throw the ball through the circle
- The other player determines how you have to place the ball on a colour (e.g. turn around 5 times and lay the ball on green)
- The players hide the balls and one player has to find them or guess where they are hidden
- Throw the ball up in the air as high as possible and try to catch it.

Children are able to come up with their own play without the need for playing cards. However, whether this play is challenging and fun enough for them differs. On top of that, some children can only come up with a few play ideas (approximately 2) whereas others come up with a lot more (5 or more). As a result, children do not necessarily need the play cards, but they could help them to come up with new or other types of play and thus enrich their play.

How do CwD and CwRD go through the play phases?

Figures 50 and 51 displays how the children went through the different play phases.

The prototype catches all children's attention and curiosity. As a result, every child enters the first play phase of exploring the rug. Every child explores the prototype in their own way and at their own pace. When the rug is introduced first, most children tend to feel the textures or the rug with their hands. One child (CwD) greatly differed by exploring the rug with a stick.

Most CwRD got bored easily after exploring only the rug. As the rug itself did not provide a lot of leads for play they required other elements such as the balls or animal figures to reach the other play phases. Or, more time to feel bored to start another type of play such as rough and tumble play that could provide a use for the rug.

This highlights a difference between CwD and CwRD. Most CwD reach a state of flow during exploration and therefore do not move through the other play phases without guidance. Some CwD move through the play phases very quickly with only the rug in contradiction to most CwRD.
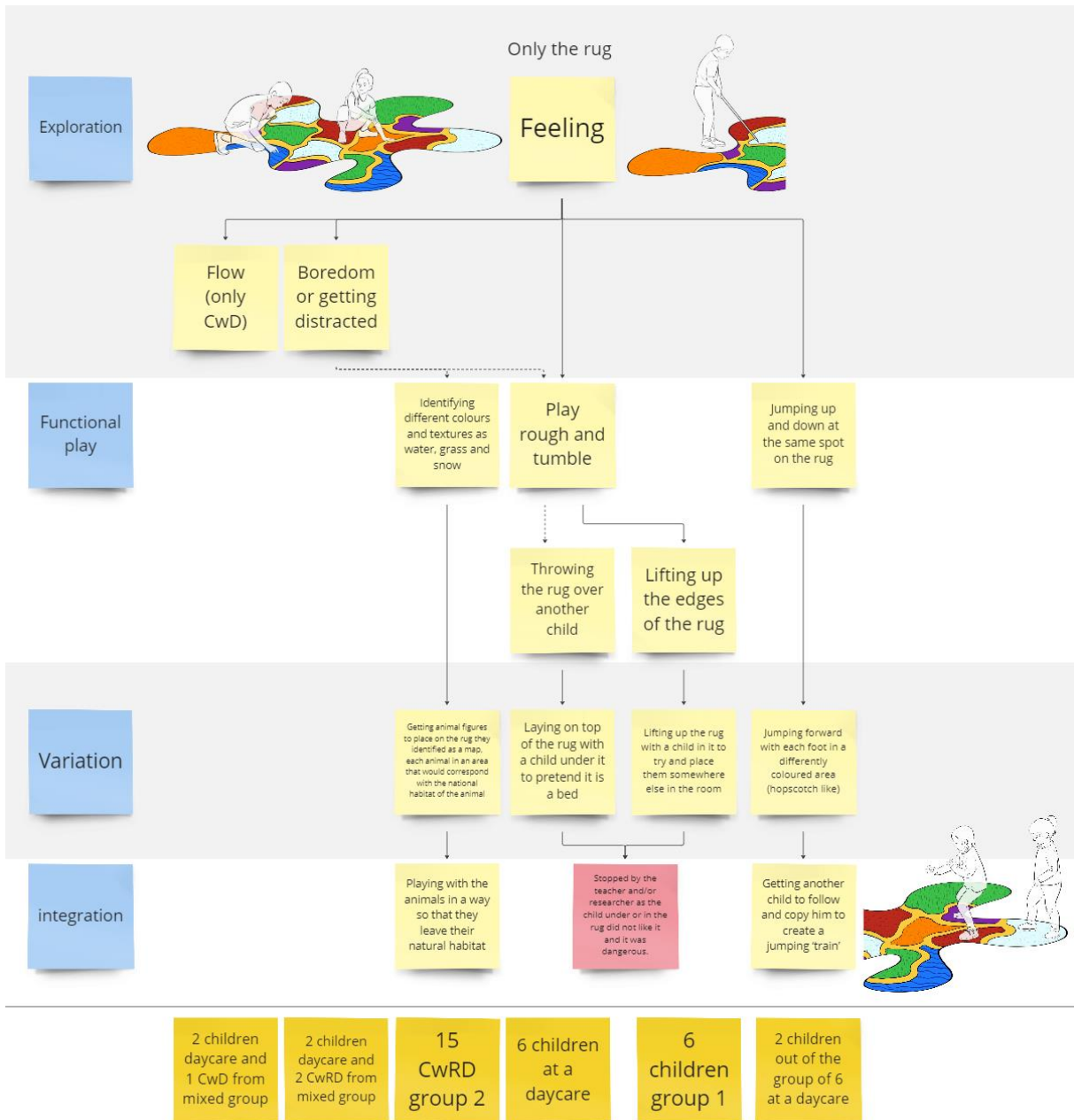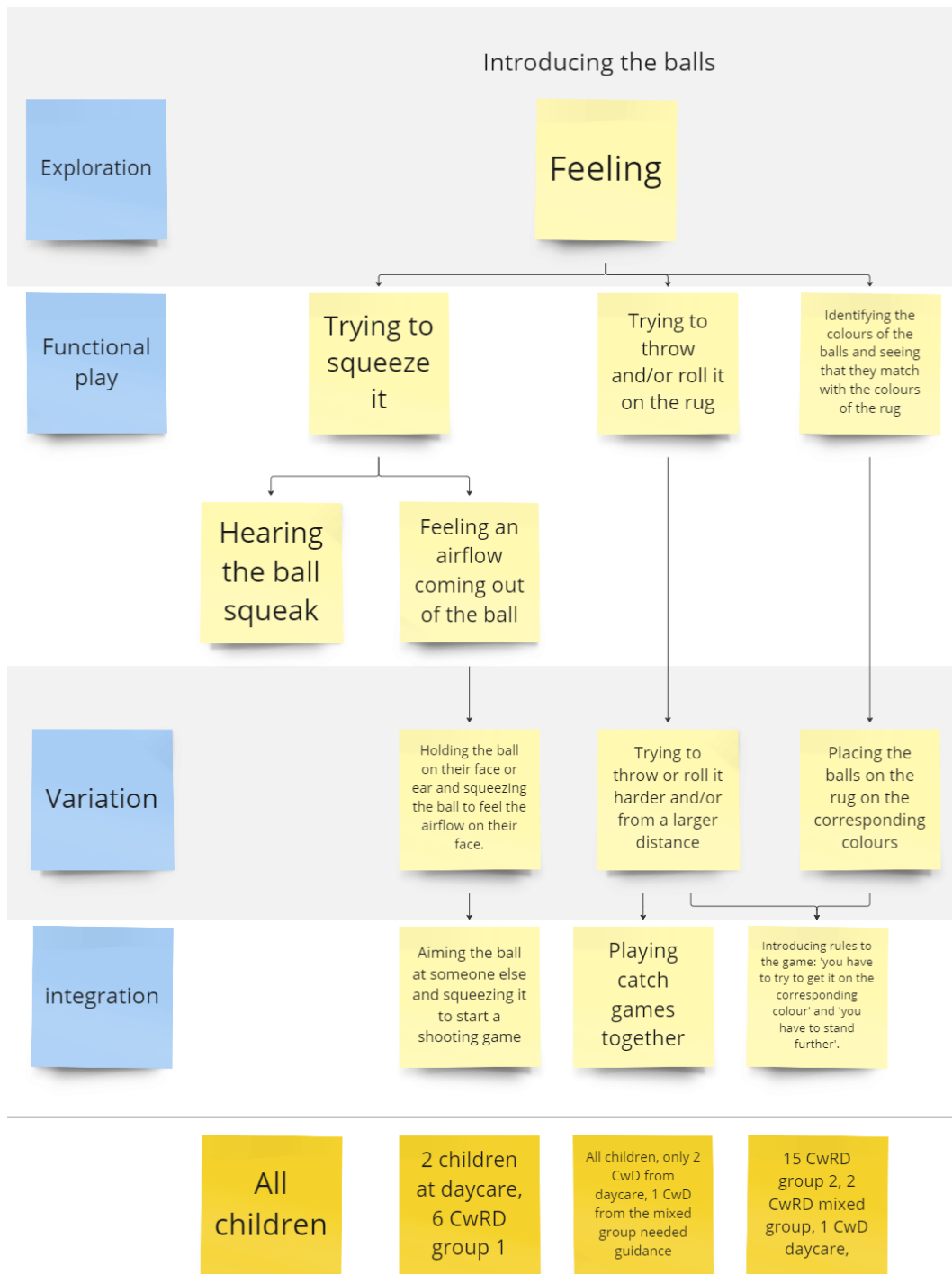
Exploration

Only the rug

Feeling

Flow (only CwD)

Boredom or getting distracted

Functional play

Identifying different colours and textures as water, grass and snow

Play rough and tumble

Jumping up and down at the same spot on the rug

Throwing the rug over another child

Lifting up the edges of the rug

Variation

Getting animal figures to place on the rug they identified as a map, each animal in an area that would correspond with the national habitat of the animal

Laying on top of the rug with a child under it to pretend it is a bed

Lifting up the rug with a child in it to try and place them somewhere else in the room

Jumping forward with each foot in a differently coloured area (hopscotch like)

integration

Playing with the animals in a way so that they leave their natural habitat

Stopped by the teacher and/or researcher as the child under or in the rug did not like it and it was dangerous.

Getting another child to follow and copy him to create a jumping 'train'

2 children daycare and 1 CwD from mixed group

2 children daycare and 2 CwRD from mixed group

15 CwRD group 2

6 children at a daycare

6 children group 1

2 children out of the group of 6 at a daycare

Figure 51

Figure 50: how CwD and CwRD went through the play phases.

- **Does the composition of the group of children influence the play?**

The DA of the children is the main influence on the type of play the children can come up with. Children with a DA between 3 and 4 tend to focus their play on one of the two elements of the concept: the rug or the balls. Whereas children with a DA between 5 and 6 focus their play on both elements. As a result, generally, the number of older children within the group influences complexity of the play, as well as the number of CwD.

- **Does the concept stimulate children to play together?**

When exploring, most younger children (DA 3-4) encounter each other but continue parallel play. This continues into the other play phases as well, as they tend to come up with more ego-centric types of play during free play. E.g. collecting all the balls and not wanting to share them (Figure X). This is a clue for action for adults as it leads to explaining to the children (CwD and CwRD alike) that they should share. However, as there currently are 6 balls, there are often situations in which every child has at least one ball. Therefore, adult guidance is not always stimulated or required.

For younger children the concept can stimulate the parents to guide the children to play together.
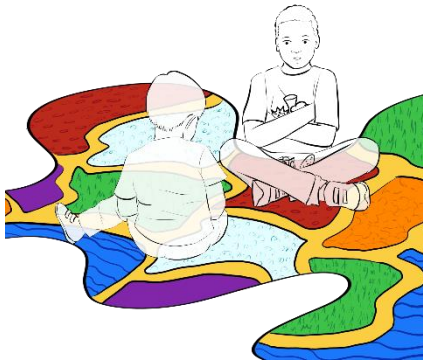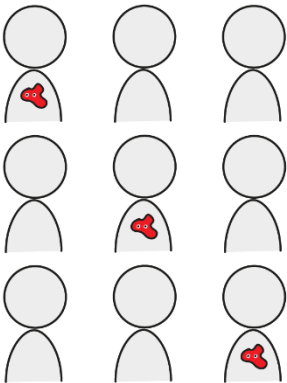
However, this changes when the DA is older (5-6). At this age, both CwD and CwRD discuss what they can do with the prototype together and come up with game ideas to play together. For them the prototype naturally stimulates social play (Hughes, 2006) (Figure X) followed by success and team play (Vermeer, 1968; Vedder, 1977).
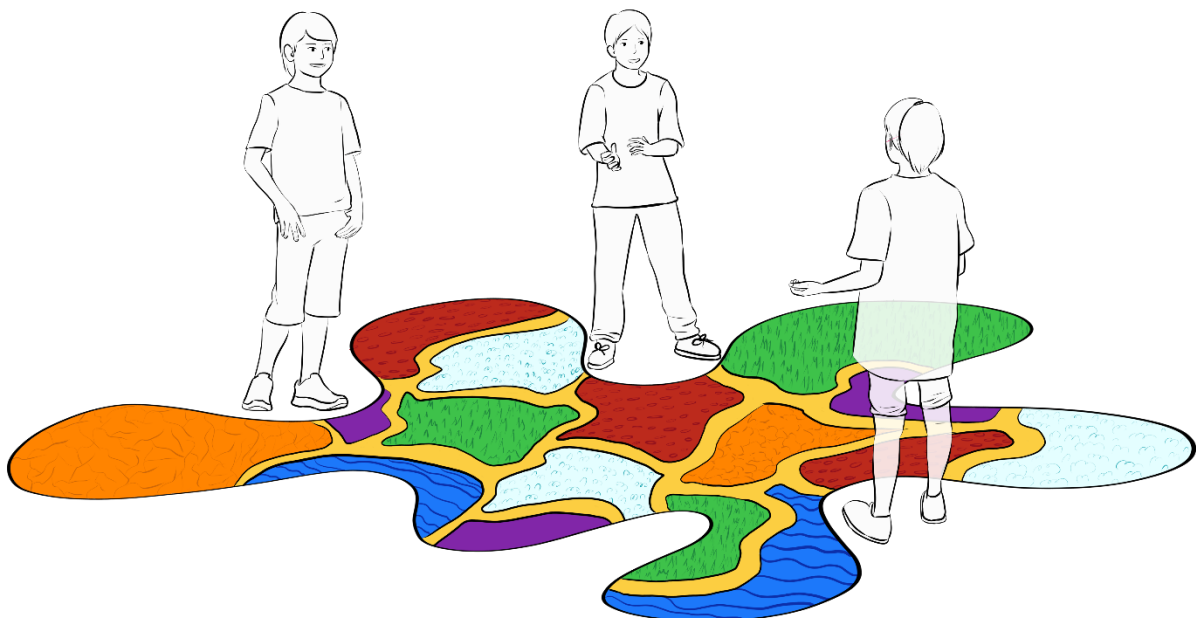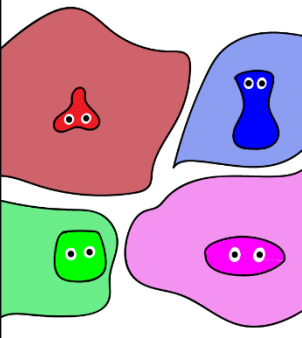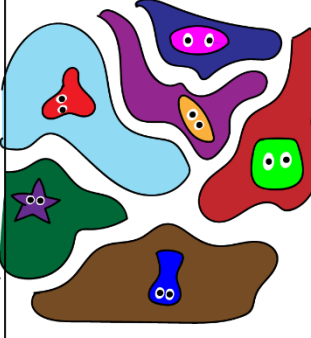
Appendix O: Play cards

Goal cards:

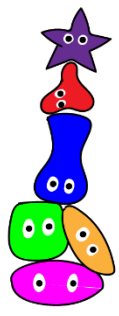| Doel	Doel	Doel
Help het monster alle spelers te ontmoeten	Breng de monsters thuis door ze met het kleed te matchen	Help de monsters om alle gebieden te bezoeken
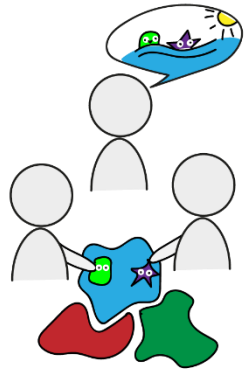
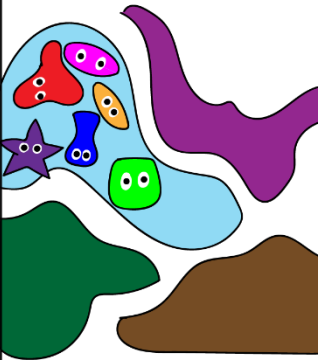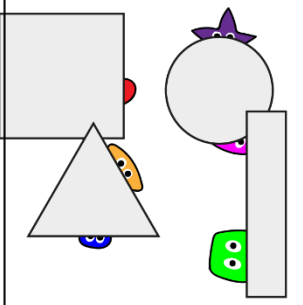| Doel	Doel	Doel
Help de monsters om een toren te vormen	Help de monsters om een avontuur te beleven	De monsters vinden het gezellig om bij elkaar te zijn

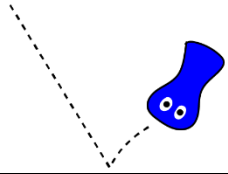**Doel**
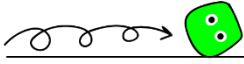
Help de monsters zich te verstoppen

How cards:

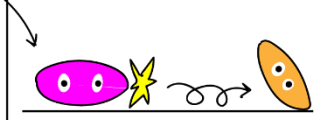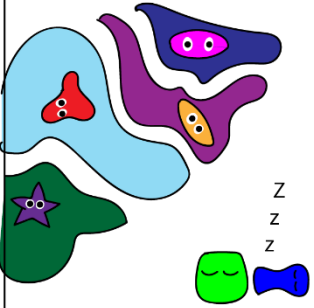| Hoe	Hoe	Hoe
De monsters vinden het leuk om te stuiteren	Sommige monsters vinden het leuk om te rollen	De monsters vinden het leuk om elkaar te verplaatsen
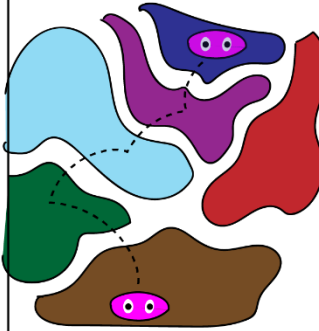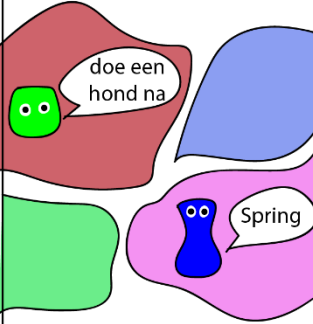
Hoe	Hoe	Hoe
De monsters verplaatsen zich 1 kleur per keer	Als een monster op een kleur land moet je iets doen	Sommige monsters zijn moe en spelen even niet mee

Hoe

De monsters willen even niet vast gepakt worden

Appendix P: Evaluation plan final test with PCwTD, PCwD, CwTD and CwD

Evaluation plan:

Research questions

Main research questions:

- What are the emotions the parents experience while using the prototype?
    - Do the parents experience a sense of relatedness (and accomplishment)?
- Does the prototype evoke a spontaneous reaction from other parents (and children)?
    - Are they tempted to join or strike up a conversation?
- Did the parents (of children without a disability) learn about the child with a disability of the other parent?
    - Do they know they learned something?
    - What did they learn? (Did they learn what I expected them to?)

Extra / sub research questions:

- Are the parents able to converse while the children are playing?
    - Do the children demand the attention of the parents often?
    - Do the children need a lot of correction?
- What do the parents think of
- Does the prototype need adjustments? Is the use of the prototype clear to the parents?
- Would the parents use the prototype again?
- Do the parents experience an added value from the prototype?
- Do the parents like to talk about their children in this way?
- (How do the children go through the play phases?)

Approach

Prototype:

- Prototype of the playing mat
- Oddly shaped balls
- Printed playing cards and conversation cards
- Laser-printed invitation sign

Other materials

- Informed consent forms (1 for each parent)
- Pen & paper for observations
- Phone for pictures
- Audio-recorder
- Premo cards

Session set-up and instructions:

Set up overview

1. Hello and informed consent
2. Introduction to the topic
3. Introduce the concept
4. Explain the task and safety regulations
   a. Protocol when something unpleasant happens
5. Perform the tests
   a. Observation during the test
6. Discussions after the play
7. Semi-structured interview
8. Wrap up and time for any last comments and questions

1. Hello and informed consent

Hallo allemaal. Allereerst wil ik jullie bedanken voor jullie komst en dat jullie mij vandaag willen helpen. Ik kijk er naar uit om samen met jullie deze test te doen. Voordat ik hier dieper op in ga wil ik jullie vragen om het toestemmingsformulier door te lezen en te ondertekenen mocht je dat nog niet gedaan hebben. Daarnaast wil ik nog een keer benadrukken dat je op elk moment kunt stoppen als je niet meer mee wilt doen. Laat het mij dus gerust weten als er een probleem is of als je je onprettig voelt. Dan kunnen we samen een oplossing vinden.

2. Introduction to the topic

Zoals jullie al weten ga ik jullie zo een ontwerp geven om te testen. Terwijl jullie hiermee bezig zijn wil ik jullie vragen om hardop te denken. Gedurende het testen zal ik soms foto's van jullie maken als je daar toestemming voor gegeven hebt. Daarnaast maak ik notities. Dit zal ongeveer 15 tot 20 minuten duren.

Daarna zal ik jullie vragen stellen over hoe jullie het vonden. Hiervan zal ik een geluidsopname maken.

3. Introduction to the concept

Nu we dat besproken hebben kunnen we het over de details hebben. Vandaag heb ik een ontwerp genaamd de Voelvlek meegenomen. De Voelvlek is een spel voor kinderen met en zonder beperking. Het is bedoeld om kinderen samen te laten ontdekken en spelen. Terwijl de ouders andere ouders ontmoeten, mee spelen en uiteindelijk elkaars kinderen een beetje leren kennen.

De Voelvlek bestaat uit het kleed zelf en vreemd gevormde balletjes. Daarnaast zijn er ook nog spelkaarten om te helpen bij het verzinnen van het spel. Gesprekskaarten voor de ouders en een uitnodigingsbordje voor mensen die langs lopen.

4. Explanation of the task and safety regulations

Ik wil aan jullie vragen om samen met jullie kinderen met het kleed en de balletjes te spelen. Hierbij kan je de spelkaarten gebruiken of gewoon je gevoel volgen en kijken wat er werkt. Vervolgens als de kinderen lekker aan het spelen zijn kunnen jullie de gesprekskaarten gebruiken om met elkaar te praten.

Verder, mochten er mensen langs lopen dan wil ik jullie uitdagen om een balletje in hun richting te gooien en ze uit te nodigen om mee te doen met het spel. Ook als mensen vragen of ze mee mogen doen mag je gewoon ja zeggen als je je daar comfortabel bij voelt.

Dat was eigenlijk alles wat ik te zeggen heb. Zijn er nog vragen?

Als laatste nog even een belangrijke opmerking: Het rood zou misschien los kunnen komen. Let alsjeblieft op dat je kind het niet in zijn/haar mond steekt.

a. **Protocol when something unpleasant happens (e.g. isolation or stigmatisation)**

Actions:

- Adress the behaviour of the person performing the isolation or stigmatisation. Explain that it is impolite and uncalled-for behaviour. On top of that, it is a form of discrimination.
- Send away the person who performs the behaviour relating to isolation or stigmatisation.
- Talk about the situation with the participants.
  - Adress that the person was very rude
  - Ask how the participants are feeling and if they are okay
  - Discuss the situation
  - Check if they want to continue the research

5. **Observation plan**

Are the parents able to let the children explore by themselves?

Do the parents interrupt the children's play?

What do the parents do before they really start playing?

- Are they watching the children explore the prototype?
  - Do they allow the children to explore the prototype by themselves first?
- Are they exploring the prototype together with their children?
- Are they looking through the play cards while the children are exploring?
- Are they making small talk?

How do the parents guide the play?

- Do the parents guide the play together or alone?
- How do they instigate the children to play?
- Do they stick to the play cards or create their own game?
- Do they correct each other or the children?

- o   If so, how?
- Do the parents experience flow of play as well?

Are the parents able to converse and learn from the conversation?

- Are the parents able to converse while the children are playing?
  - o   Do the children demand the attention of the parents often?
  - o   Do the children need a lot of correction?
- Are the parents using the conversation cards?
- Are the parents continuing on one topic of the conversation cards or do they keep pulling new cards after answering the question shortly?

Do the parents connect to other parents?

- Do the parents invite other parents and/or children?
- How do they invite other parents and/or children?
- Do the other parents join, ask questions, stare or ignore?

Which characteristics of the prototype allow or hamper flow?

- The texture of the mat, the colours of the mat, the different planes, the colours of the balls, the shapes of the balls, the material of the balls, the play cards, the conversation cards, the other children, the parents, etc.?

6.   Discussion after the play

De tijd voor het testen is om, enorm bedankt. Is het goed als ik de geluidsrecorder hier neerzet?

Hoe vonden jullie het?
Hebben jullie nog vragen aan de hand van wat jullie net gedaan hebben?
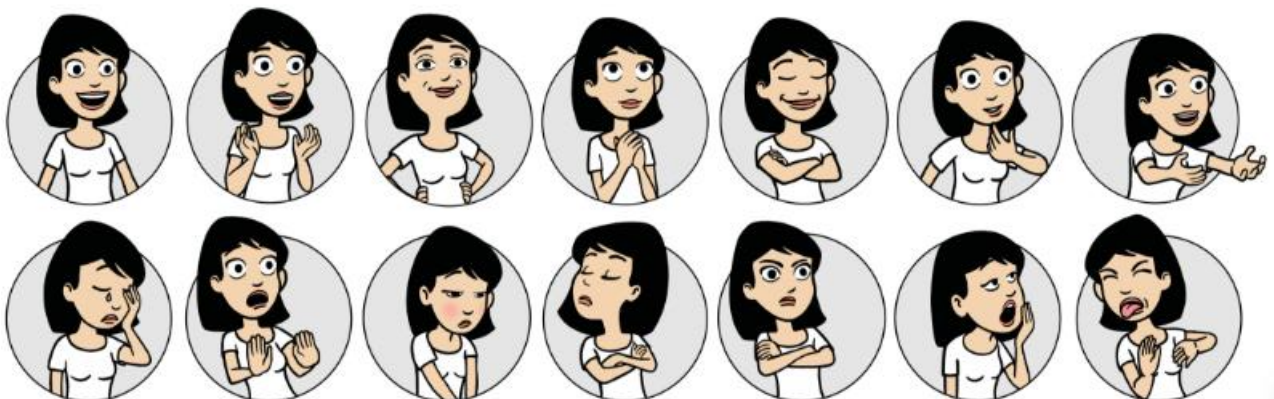
7.   Interview questions

Emotions and feelings

- Tijdens het testen hebben jullie verschillende dingen gedaan. En ik ben heel erg benieuwd hoe dat ervaren hebben. Zou je de kaartjes kunnen aanwijzen die het best weergeven hoe je je voelde tijdens het testen?

- *Wijst kaartje(s) aan*
- Zou je aan mij uit kunnen leggen wat dit kaartje voor jou betekent?
- Kun je uitleggen wanneer en waarom je je zo voelde?
- In het geval van een negatieve emotie: is er iets wat er voor zou kunnen zorgen dat je je beter of comfortabeler zou voelen?
    - Indien bepaalde onderdelen van het testen niet benoemd worden kan hier nog naar gevraagd worden door de onderzoeker. De verschillende onderdelen zijn:
        - Het bedenken/kiezen van een spel
        - Het spelen
        - Een balletje naar een voorbijlopende ouder gooien
        - Het uitnodigen van een andere ouder
        - Het afstand nemen
        - Het praten met de andere ouder.

Learning

- Ik ben ook heel erg benieuwd of jullie iets geleerd hebben van elkaar. Zouden jullie daar iets over kunnen zeggen.

- Hoe vond je het om op deze manier over je kind te praten? Hoe vond je het om op deze manier over een ander kind te leren?
- Heb je het gevoel dat de Voelvlek voor jou iets toevoegt aan het speelmoment met je kind en aan het contact met andere ouders?
- Zou je de Voelvlek nog eens gebruiken? Waarom wel of niet?
- Zou je de Voelvlek ook meenemen naar een speeltuin bij jou in de buurt?
- Zou je de Voelvlek aanraden aan andere ouders van kinderen met een beperking?

- Hoe vond je het om te praten met een andere ouder terwijl je kind voor je zat te spelen?

8. **Wrap-up and time for any last comments questions**

Bedankt dat jullie mee wilden doen met mijn onderzoek. Jullie hebben mij heel erg geholpen. Mochten jullie nog vragen of opmerkingen hebbe dan hoor ik het graag. Anders denk ik dat we het hier af kunnen ronden.

Appendix Q: full list of results, evaluation and conclusions test with parents and children

What	So what	Now what
Many CwTD came to ask what game was being played and if they could play along. They also picked up monsters that had flown away to bring them back to the participants of the research.	This shows that the Voelvlek does stimulate curiosity and spontaneity in children.	It is proven that the spontaneity in children is increased and contact is stimulated by the prototype.
A CwD could not read the cards	The child had poor eye-sight causing the letters to be too small. This decreased the involvement of the child in setting up the game.	To allow all children to be involved on a similar level independent of their visual disabilities, cards with a larger font size: 18pt (MKB Toegankelijk, n.d.) and tactile elements could be used.
The cards got lost or flew away when the children were playing	They were difficult to spot due to their size. Losing the cards will decrease the amount of card combinations that can be made in follow up plays thus making it more difficult to set up plays for parents. On top of that, if the product is borrowed this can cause anxiety of losing them for the parent who borrowed the product. It will also increase the maintenance costs of the product.	The fear of card loss can be decreased by increasing the card size and adding a ring to connect them. As a result, the cards will be easier to find if they are misplaced or accidentally kicked away.
The parents barely used the conversation cards	The parents were enjoying the plays and focused on the play cards. Due to that, they forgot about the conversation cards. As a result, the parents stay involved in the play. This decreases the independence of the children and decreases the social development of the children (Obradović, Sulik & Shaffer, 2021). On top of that, the parents do not reach a deeper level of conversation.	The conversation cards should be integrated more within the play. Combining the play cards and conversation cards could be a way to do this.
Other parents were curious about the play and prototype but did not join the play	The prototype and play intrigued them causing them to ask questions, but they were tired from the holidays and wanted a break from their	Use bouncier monsters. (The shape of the monsters causes them to move unpredictably, however, they often still tend

	children. On top of that, the monsters did not fly away far enough to reach the parents who were at a distance, thus the parents were not stimulated enough to join.	to stay near the rug as they are not bouncy)
The parents discussed how they could match the cards or what the rules of the game were. Causing them to set up the game together and learn about each other's values/boundaries during play. As well as what the children liked.	Due to the mixing and matching of the play cards, there are no official set rules and thus the game and rules have to be defined during the play where the two parents also take on the role of referee. This causes them to communicate about the boundaries they set and find common ground. Finding common ground is essential in defining social relationships and increases social affiliation (Enfield, 2006; Enfield, 2013).	Not having a ready-made but mix-and-match play works well to start easy discussions about the play and stimulates parents to find common ground helping them to define their social relationship.
One parent had difficulty in finding card combinations they thought the children would like. Thus feeling pressure to perform. (This pressure also clouded their creativity as they started to take the cards very literally).	When setting up a play for CwD not all cards can be matched as the possibilities of the child play a role in the set up of the game. A parent wanted to quickly set up a game but as not all cards could be matched due to the possibilities of the CwD they felt pressure to perform. This pressure seemed to cloud their creativity as well as they started to take the cards very literally. Causing an even greater stress.	The opportunity to get familiar with the product is important, rather than suddenly having to perform on the spot. This can cause pressure to perform for certain parents. Having the opportunity to borrow the product and first use it at home can be very useful in decreasing the pressure to perform as there are no other parents involved yet.
The parents of the 2ⁿᵈ and 3ʳᵈ test went quite quickly through the play cards.	There are only 7 goal cards and 7 how cards. Theoretically, 49 card combinations can be made, however, the creativity of the group can limit the amount of play ideas. This can cause children and parents to feel bored with the product after 1 or 2 uses.	Adding 3 more goal and how cards (10 cards total per kind) will double the amount of possible card combinations while keeping a small amount of cards. This will make the prototype more attractive to be used more often by the same person.

During all test sessions, different games were played	Parents made different card combinations as well as having their own creativity and thus they all had different ways of setting up the play and rules.	This allows the games to change when different parents use the prototype. Thus, keeping the play interesting even if children have already used the prototype before.
All participants were very focused on the play cards and only played according to their interpretation of the cards.	The parents and children rarely engaged in free play and used limited creativity to come up with new play ideas. This limits the learning experience of coming up with ways to play inclusively.	To stimulate free play as seen during the test with children (Chapter 7.2), clues to stimulate free play should be given. Including play cards with text such as "The monsters would like to learn something new. Can you come up with a goal for them?" can remind them and show them that they can use their creativity to come up with new inclusive play ideas.