

Wrapid

Maudi Cox

1455702

m.cox2@student.tue.nl

Bente Elst

1451189

b.elst@student.tue.nl

Despoina Hadjyianni

1585509

d.hadjyianni@student.tue.nl

Omar Dahoe

1562924

o.n.dahoe@student.tue.nl



Figure 1 : The Wrapid home mending kit

ABSTRACT

Clothing is frequently disposed and thrown away in the current fast fashion industry. The goal of this research through design project is to shine a light on the new stigma around repairing and find a way to create more motivation/excitement around mending.

Wrapid is designed to show parents a personalized but mostly time efficient way of mending their kids clothes and to stimulate the trend of repairing to come back.

A combination of different qualitative research methods is used to find out in what manner personalized vinyl patches contribute to the adoption of mending and repairing clothes. Due to the research it was found that 90% of the parents are more willing to repair clothes when considering the personalized patches. A future opportunity to find out more about this topic would be to make the service functional and open to customers to help the research get more exposure and a deeper dive into the implementation of this new way of mending.

Author Keywords

Vinyl patches, personalization, mending, fast repairing

INTRODUCTION

In this day and age repairing and mending clothes is used less frequently than it used to be. (Gwilt, Alison, 2014) Most people do not have the skills, knowledge and time to mend their clothing. (Gwilt, Alison,2014) The way people wear and select their clothes has changed a lot due to fast fashion. (Gwilt, Alison,2014)For example ‘Consumers are generally aware of fashion but make considered judgements about the extent to which fashion trends and designer labels should influence their purchasing decisions.’ And ‘Many people, particularly in younger age groups, purchase cheap, fashionable clothing from low budget retailers, fully aware that it will not last long in a reasonable condition.’(Fisher, 2008, p. 20)

When giving people the knowledge and skills about mending, people consider this knowledge as valuable and are more keen to repair their clothing. People are more inclined to hide the visible repair marks behind patches. This is due to it being socially unacceptable to wear visible repaired clothes. (Fisher, Tom, 2008)

Knowing that people who have knowledge about mending are more keen to repair their clothing and that patches are a nice solution to upcycle the repaired spot on a piece of clothing. The problems that have to be solved are; destigmatize the repair patches/mending by providing the user a visible way of patching without having visibly stiches, traditional repairing is a time consuming job and there is a need of knowledge and tools, and personalization focus on trends and patterns that users as individuals will create or design

Looking at these problems Wrapid was created.

By doing research about vinyl it was found out that it can be used as a repair method, it combines the strength of the vinyl to withstand stress from wearing clothing. The vinyl is very easy and fast to apply compared to already existing mending techniques. Vinyl also gives the freedom to be cut in certain shapes and be layered to create figures like traditional patches have. The strength gives it good mending properties and the freedom to create figures gives possibilities for creative expression. Combining these properties tackles the problems of current mending techniques.

PRELIMINARY RESEARCH

In the last couple of years, the clothing industry has been shortening the life cycle of fashion. This is done by adopting a fast-fashion business model [1,2] The life cycle of fast-fashion is said to be a month or less according to [3]. Due to the cheapness and trendiness of this fast fashion, consumers purchase this impulsive and more than ever before [4].

Fast fashion has grown immensely in recent years, even when there is an economic downturn [5]. Another factor in this is the easy access to media, covering catwalks, fashion news, celebrity looks and new trends due to the growth of social media in the last decade. Due to this, consumers are increasingly interested in fashion and their appearance. They desire variety, newness and shop more frequently [1].

Fast fashion does not only influence the purchase behavior of consumers but also the post-purchase behavior. Because of low quality, new fashion

trends or because the clothes are bought for a one-time event, consumers stop wearing their clothes. [6,7] Fast-fashion is made and sold to be worn no more than ten times [8]. In-between the years 2003 to 2008, the textile waste in the UK grew with 330 due to fast-fashions [9].

The disposal of clothing is related to the environment. Even though almost all textiles are recyclable, in 2018, Americans threw away over 17 million tons of textile waste, only 2,5 million tons were recycled whereas over 11 million tons landed up in landfills [10] . When clothing is damaged, consumers are not as active in selling or giving away their clothing, they throw these clothing pieces away faster than for non-damaged pieces [11].

Benchmark

How can a design help people feel more motivated and engaged to repair and mend clothing. Most products in this category are mostly based on a quick repair or require certain skills to have a successful repair process.

Home repair kits, have always been the basic option regarding repairing clothing. The kit consists of multiple colored jars, couple of different sizes of yarn needles and a scissor. [18].Using this kit requires certain knowledge and skill. People can find information about it online or in books. This threshold of taking the time to learn how to use this kits, demotivates people to pick it up and start repairing their clothing. (Gwilt, Alison, 2014)

Another way of a quick repair for clothing, are patches. Patches are embroidered pictures on a fabric, which can be stucked onto a piece of clothing

for decorative and also repairing purposes. Looking at the repair function of patches, the long term performance is quite bad. Looking at one of the most sold patches packs on Amazon.com, reviews show that the glue performance is bad. [19]

The easiest alternative for repairing clothing is fabric glue. This is a glue made for gluing fabrics together. The performance of it is very good and it can withstand washes. The only downside is that there is no creative and personal expression with this mending technique.[20]

All these products have certain strengths and weaknesses. Combining the creative expression of the patches with the performance of the fabric glue would be the perfect outcome. As this does not already exists, the research can very valuable to this industry and could offer opportunities to new products.

RELATED WORK

There is a stigma has people who wear clothes that have been repaired nowadays [16]. In order to get deeper on this it is necessary to understand the reasons that prevent people from repairing their clothes.

First of all the majority prefer to wear an invisibly repaired clothing item since having visible stiches and patches is not a “trend” nowadays[16]. Despite the fact that people prefer the invisible way of repairing, it is found that most of them have limited skills on mending [16]. This has been the biggest barrier that prevents them from repairing.

Furthermore the participants of a workshop called ‘Make, Do and Mend’ project. (Gwilt Allison, 2014)

also consider the repairing work as a time consuming job that requires certain tools and time[16]. Based on these barriers people do not get engaged easily with repairing garments and this results in wasting more and more garments[], especially in the younger age groups, since children constantly damage several clothing pieces [16].

Some parents that have been interviewed by this research group said; **“My kid is 7 years old ruins his pants every 15 days, I have to patch them almost every week”**, **“ I usually repair my kid’s clothing since he usually has holes in his pants especially in his knees”** and **“ I have one kid is 11 years old and have to repair a lot of his clothes, it is tiring”**. Based on these and some more findings described more in the Preliminary Interview section, the target group of this research is parents that have kids from 5 to 12 years old.

By analyzing the data from the interviews, the analysis showed that children damage their clothes quite often. On places such as the knee areas on the jeans, rips in t-shirts, and more. They do this quite frequently.

There are a lot of different mending techniques for clothing. The knowledge of a person on these techniques is dependent on the accessibility to materials and skills and the social cultural norms of the time. Gwilt, Alison(2014)

In the research of (Gwilt Alison, 2014), named ‘What prevents people repairing clothes? : an investigation into community-based approaches to sustainable product service systems for clothing repair’ a research was done about the knowledge about and attitude towards mending clothing, called ‘Make, Do and Mend’ project. (Gwilt Allison, 2014)

The project revealed that most participants hid the damage behind a cloth patch. the patch is used to cover the repaired damage of the clothing. The patches were clearly visible and almost decorative. The project also revealed that the participants value the knowledge they can find online and offline. In conclusion this research shows that there is a need for people to re-engage with mending practices and for people to accept to wear visible mended clothing. (Gwilt Allison, 2014 p. 5)

In the research of (Gwilt Alison, 2014) it was found that many people care about their clothing. Regarding newness quality and in younger age groups they care about low prices, if it is fashionable and influenced by the current trends. Most people are also aware of making sure they use as low energy as they can when washing their clothes. When it comes to repairing, people lack the skill and knowledge how to repair it and tend to just buy new clothes for a cheap price.

When disposing the clothes, clothes are often disposed on a cyclical basis. (Fisher, Tom, 2008) People give it to charity or use them as recycled fabrics. Cheap clothes are more likely to be discarded than to be given to charity. Cheap clothes are also more likely to be thrown away due to their low quality. (Fisher, Tom, 2008)

PREVIOUS WORK

In **Figure 2** below, a schematic show the previous work of this research and the implementation of the different research methods in each section.

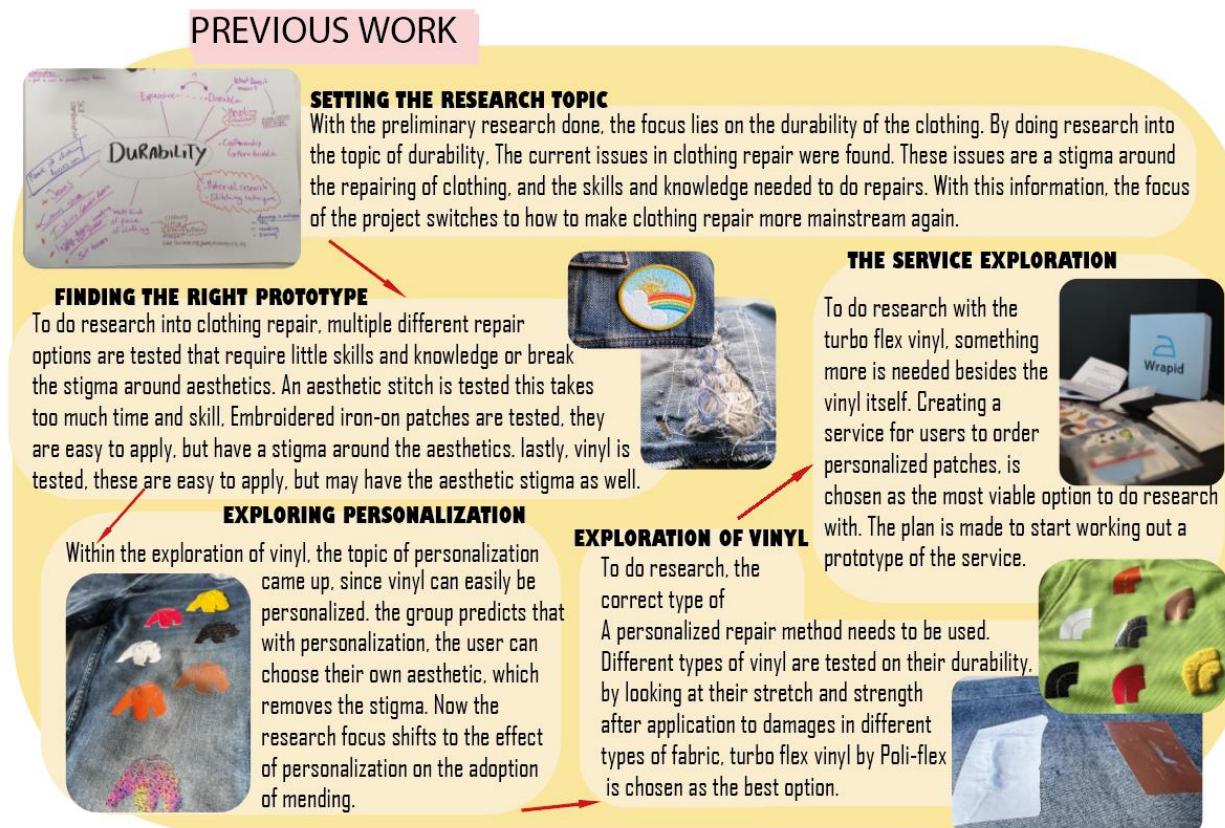


Figure 2, The previous work

METHODOLOGY

In order to get deeper and answer the above research question (see **Introduction**) it was necessary to create a design prototype that works as a tool to gather information and findings from the defined target group, parent of children from 5 to 12 years old. Consequently a methodology plan is necessary to be made.

Firstly based on the related work and some existing researches (see **Related Work and Preliminary Research**) parents that have kids from five to twelve years old was chosen as a target group. The goal is to test the personalized patches on kids clothing since they ruin their clothes more often. However, despite the fact that repairing kids' clothing is the key to answering the research question, parents are needed for the interviews and testing of the proposed method (vinyl patches). Therefore the following is used:

1. Doing a preliminary semi structured interview with several parents who have kids between 5 to 12 years old. In this way the chosen target group is verified and the related work is supported by having evidence from the participants. Parents are asked to answer some personal information talk about their skills on repairing clothes, and their attitude towards mending and repairing their kids' clothing.
2. Afterwards, the analyzed data from the interviews are used to find the appropriate method (the Prototype) that can be used in order to make the participants (parents of kids between five and twelve) more engaged on repairing. According to these information the design prototype was made

and vinyl patches are chosen as the most appropriate tool.

- Finally after the final research question is formulated, some co-creation workshops are conducted by the researchers, with different parents to test their attitude towards the prototype. In these workshops people are asked to follow some instructions, use the provided kit and try to repair their kid's clothing by using the prototype and interact with some physical elements.

PRELIMINARY INTERVIEWS

As a preliminary research, a semi-structured interview with several parents with kids between 5 to 12 years old is conducted. This interview is aimed to get a better understanding of factors that affect the damaging and repairing of kids clothing.

The main goals of the interview:

- Finding out the influence of age, fabric, gender and what part of the clothing have on the frequency of damages and stains.
- Getting more insight on the relation between parents and the mending of the kids clothes or throwing them away.
- Understand what factors have an effect on the way mending is looked upon by the kids and parents alike.

Interview analysis

After the interviews the clustering method is used in Miro to find common answers. Significant quotes were sorted by theme and analyzed.

Findings

The interviews were analyzed using a thematic analysis. From the ten people interviewed all said that repairing takes a lot of time since clothing of their kids is so easily damaged because of playing outside and crafting. Mainly the knees of jeans were the big problem.

Placement of the most damages:

- Rips or holes in jeans. Mostly on the knees.
- Biting the cuffs of sweaters
- Having food and dirt on the front of sweaters, knees of jeans and bottom of jeans.

The general trend in these interviews was an attitude of 'yes I want to repair but I don't have the time or skill' or the kids are growing out of it so fast that there's no point in trying.

While most of the participants saw the importance of maintaining clothing, some of them saw the solution in giving away clothing to the grandparents to mend.

Ways of repairing that were used:

- Sowing with a machine
- Hand sowing
- Ironing on patches
- Cutting of long pants to be short pants when it had holes.



Figure 3, ripped jeans and sleeves

However difficulty was often found in sowing jeans as it has a circular form and they couldn't easily fit their arms or machine around it. Which, when looking at that most damages come from holes in jeans, is a major opportunity for improvement.

It was interesting to see that the kids of the participants all had different opinions or attitudes surrounding the mending of clothing as well.

Some of them did not care to wear damaged clothing to school whether others were very attached. The most important insight was that a lot of the kids did not like the current mending techniques that their parents used since it didn't look 'cool'. This often varied with age as well. With younger kids having less of an opinion than older ones. The main thing was that clothing had to be comfortable, which the stiff patches that are often used right now are not.

Out of this analysis was concluded that researching a 'quick fix' way of mending with a personalized aspect was the best way to find a possible solution for the mending of kids clothing.

PROTOTYPING

To answer the research question, “How can personalized vinyl patches contribute to the adoption of mending and repairing clothes?” a design prototype is used. The prototype is supposed to represent a service that people could use to create order and use vinyl patches to mend clothing items.

The vision of the service:

The idea of the service is a website where customers/users can go to order vinyl patches. There are four options in ordering the patches. The user can order pre designed vinyl patch kits divided by different topics, like sports, cats, summertime, etc. Another option is to create your own patch kit by choosing different single patch designs from the website, and the third option is to order a big rectangle of one color of vinyl so the user can cut out their own design with scissors at home. The final option is to send in a photo, drawing or description of your own vinyl patch design to let it be made. For all options the user can choose the size and colorways of the design.

The physical kit:

To imitate the service, an example of a kit (Figure 3) with predesigned patches is created. This is a kit a user could potentially order from the website service. The kit is a small carton box containing, a piece of baking paper, black and white vlieseline, a manual and the actual vinyl patches.



Figure 4, the kit

The vinyl patches:

The vinyl used to make the patches is Turbo flex from the brand Poli-Flex. This is a type of heat transfer vinyl that exists of three components, the colored plastic, a see-through piece of foil on the front and a glue layer on the back of this plastic. The vinyl is made to adhere to fabrics by applying pressure and heat to melt the glue layer on the back of the vinyl. The patch designs (Figure 4) are made on illustrator by creating a vector drawing of the design and then outlining this vector drawing. The vinyl is cut out by a vinyl cutter, after sending the illustrator outline to the machine and placing the roll of vinyl in the machine. It will cut out the design in the vinyl and glue layer without cutting the see-through foil. To finish the patch the vinyl that is not part of the design is peeled away from the foil.



Figure 5, Example of a vinyl patch

The manual:

The manual in the kit describes to users how to use the supplies in the kit for the mending of their clothing. It uses text as well as pictures to portray the message. The manual can be seen below (Figure 5).

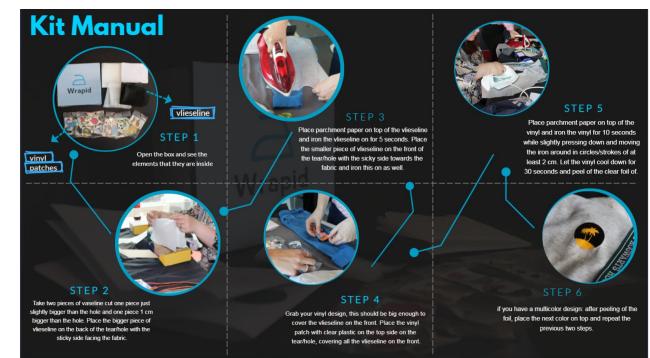


Figure 6, The instructions manual

WORKSHOPS

By gathering information, from both interviews and existing researches, the choice of the design

prototype was made (see Related work and Preliminary Interviews). After that, in order to test the effectiveness of the designed tool (see Prototype) as well as gather more data for answering the research question a workshop method is used.

The workshops are divided in 2 follow up sessions. Although parents are involved in both sessions, their kids' input is extremely valuable for conducting the workshops. In these sessions parents co create with the research group, their personalized vinyl patches and they are observed while repairing their kids' clothing. Their overall experience is evaluated and some questions are asked during this evaluation. Below the workshops' plan is explained in more details.

Goal

The goal of these workshops is to test and evaluate the users' (parents) interaction and attitude towards repairing their kids' clothing before and after using the personalized and fast way of repairing(personalized vinyl patches).

Participants requirements and pre-tasks:

- Only parents that have at least one child from 5 to 12 years old are eligible to participate.
- Looking for participants that are willing to get involved in repairing their kids' clothing.
- Find at least 4 participants for the workshops.
- Preferably the participants can bring some of their kids' old damaged clothes that needs to be repaired (otherwise they can use some old clothes that the researchers can provide them with).

- Participants have to discuss with their kids, what they would like to have as a design for their personalized vinyl patches. Those designs are designed by the researchers and provided to the participants during the workshops, in order to use them for covering the holes or tears in their kids' clothes.

Participants recruitment:

The research group gathers participants by distributing flyers (*seen in figure below*) to random parents and contact different repair groups(online). Lastly most of the participants are gathered from social media groups like Facebook.



Figure 7, the workshop flyer

Workshops' set-up & plan

The workshops are divided in 2 main sessions.

First session:

This session takes place in a room with laboratory settings since the participants have to perform some tasks and use some specific tools during the workshop. During that procedure there is a discussion between the researchers and the participants and some questions have to be answered

by the participants while discussing. This session lasted approximately 40 minutes.

The parents will have a physical meeting (the Workshop) with the researchers and have to follow the given instructions from the researchers.

Firstly the participants have to sign the given consent form (*Appendices, 1*). They introduce themselves and give some details about their existing skills on mending and their past experience with repairing clothes. Then a brief introduction about the theme of the workshop will be given to the participants. The participants will have to interact with the physical elements provided by the research group that are placed in the table in front of them. Afterwards the mending kit (Wrapid) is given to them and they are asked to follow the instructions manual. Their personalized vinyl patches are placed in each participant's kit as well as all the other necessary tools (see Prototype). After experimenting with the kit and making different explorations by cutting their own design patches, a proper demonstration is conducted by one of the researchers. After, a follow up, semi structured interview is conducted and some questions will be arise about their overall experience, the personalization aspect and the provided kit.

Second session:

In this session the same participants are asked to take the workshop kits with them after the first session and do the same procedure at home. The participants are asked to take pictures of the clothing that they have repaired and involve their kids also in the mending activity. To sum up big pieces of multicolored, plain vinyl papers are given to the participants so they can design and cut the vinyl

however they want to, therefore kids can create whatever they want at home.



Figure 8, Conducting the workshop:

Findings

The main findings of this research method are based on qualitative data. The participants' answers are clustered in different themes and some general conclusions are drawn out of each cluster. The follow theme clusters are created:

1. Pre-existing mending skills
2. Personalization of the designs
3. Service
4. Aesthetics of repairing
5. General suggestion

The most significant quotes from the participants are clustered below in different themes (Figure,)

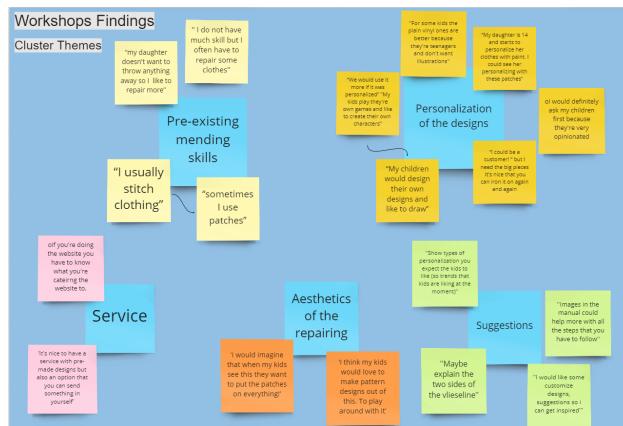


Figure 9, workshop findings miro

Pre-existing mending skills

Four out of the five participants mentioned that they usually repair their kids clothing since their kids ruin their clothes very often. However, the traditional way of repairing is not that satisfying for them. One said that **"As long as this method does not involve stitching then I will try it"** and one other said **"I usually use stich but also patches it depends on the damage. However, it takes a long time finding the appropriate method, it is tiring"**. Furthermore, one also said that **"Even if I do not have the skills to repair clothes, sometimes I just need to do that. That is why I came, I might learn something new and easy"**. To conclude, some participants had tried different mending techniques in the past for repairing their kids' clothing. Even if they do not enjoy the procedure or do not have the required skills, they feel "obliged" to do that.

Personalization of the designs

As far as the personalization of the design patches, which is the main focus of this research and

consequently this workshop, the 80% of the participants was extremely positive towards its effectiveness. One mother said that **"My child is very opinionated, she would like to personalize everything, design her own things"**, **"I think I could sit with my children and choose the designs together, make a whole design out of it"**. On the other hand another participant mentioned that her child does not care about the illustrations or designs and that she would do that by herself.

BUSINESS PLAN

This research could be implemented in an existing brand and be used as a personalized repair service. By introducing it to a large brand, exposure of the research could help people be more aware of the possibilities of repairing clothing.

Another way that the research could contribute to current businesses, could be by introducing this method of repairing, in a repair shop as a repair service. This could help the repair shop be more efficient and could also motivate people to have their clothing be repaired by someone or a repair shop.

The research could also contribute to other researches in a way building further on the question why people are not motivated to repair their clothing.

Value proposition Canvas

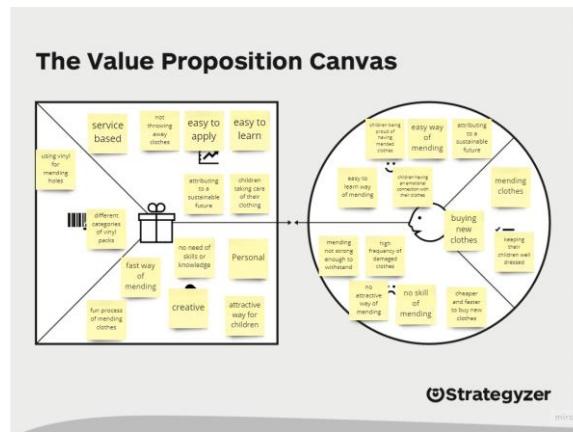


Figure 10, Business Model Canvas

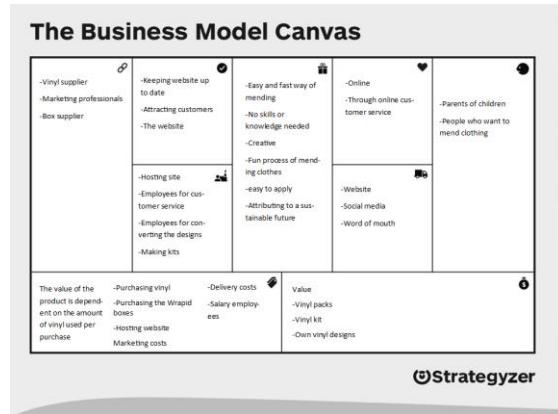


Figure 11, business model canvas

DISCUSSION

Few participants

For the research activities, less than 10 participants were used due to a lack of people willing to participate. A low number of participants can lead to a wrong representation of the actual world, this is something to keep in mind while using the results of this study.

Biased methods

The methods used during this research are interviews, workshops and surveys. These types of research methods use participants willing to help with the study. The danger in using these type of participants is that they have the tendency to tell you what you want to hear. For a research project this can endanger the reliability of the results. Therefore it is important to keep in mind that there is a possibility the results of this study can be biased.

The prototype

Due to the lack of time and proper testing gear available during this study, the prototype used during the workshop could not be researched and tested properly. There is a chance other types of vinyl can be better for the application in mending clothes. Because of the same time constraint, many other possible patch options outside of vinyl, have not had the opportunity to be tested. Therefore this research only focusses specifically on vinyl and not mending in general. The research will be more useful if it also included other mending techniques and/or materials.

FUTURE WORK

Limitations

There were a few limitations regarding the research for Wrapid. There was a time constraint and lack of proper testing gear when researching what vinyl type would be the best for mending. Therefore the strength of each vinyl type could not be tested properly. The way this has been done is through real life testing on damaged clothing. This is still a realistic way of testing what vinyl is most appropriate for mending holes in clothing.

The biggest limitation for this research was the amount of participants that could join the study. Collecting the users was quite hard. The focus group are parents of young children. It was found out that most parents did not have time for joining the workshop, but were still interested. Therefore the home kit was introduced, so the parents that could not come to the workshop could try Wrapid themselves at home. In a next study more participants could help a lot to collect data about the adaptation of repairing and mending clothes.

Opportunities

Due to time constraint, the product was not made completely made into a service. In study this service would be functional and open for customers to order and send in their own designs. This also means that the product would get a cost structure. This would help the research get more exposure to people who are interested and help the research get more data.

During the workshop, people used plain sheets of vinyl and started cutting out their own shapes. Some other feedback states that looking more in to the aesthetic side of the patches, by placing different types of patch designs on things like 'Vinted' and see which ones get the most views saves and which ones get bought first. The website could also introduce a place where people can place photos of their patched up clothing so people can get inspired and referenced by each other's designs.

Other opportunities would be in the research. More research about personalization of mending could be

done, like other techniques besides workshops and interviews.

CONCLUSION

There is a big problem right now with textile waste in the world, because of fast fashion. People throw away a lot more clothing items than before and damaged clothing almost never gets resold or given away. People often do not repair damaged clothing due to a lack in knowledge or skills or because there is a stigma around the aesthetics of clothing repair. This research focusses on the effect of personalization of clothing repair patches. The research question to answer is: “How can personalized vinyl patches contribute to the adoption of mending and repairing clothes?”.

In the preliminary interviews and the workshops, we found that a lot of participant do mend clothing, but they are not satisfied with the way they do it right now, often needle and threat. A lot of parents are looking into easier and faster ways of mending. Most participants do like the option to personalize designs, their kids can be opinionated and will not wear everything. There are also some participants that do not care about the personalization. But all participant would start mending clothes faster if it is easier and more creative than the needle and threat the used before.

Overall, this research shows that personalization and easy of patching up clothing does influence the adoption of mending positively. However, relating back to the discussion, further research needs to be done in to this to be more sure about these outcomes.

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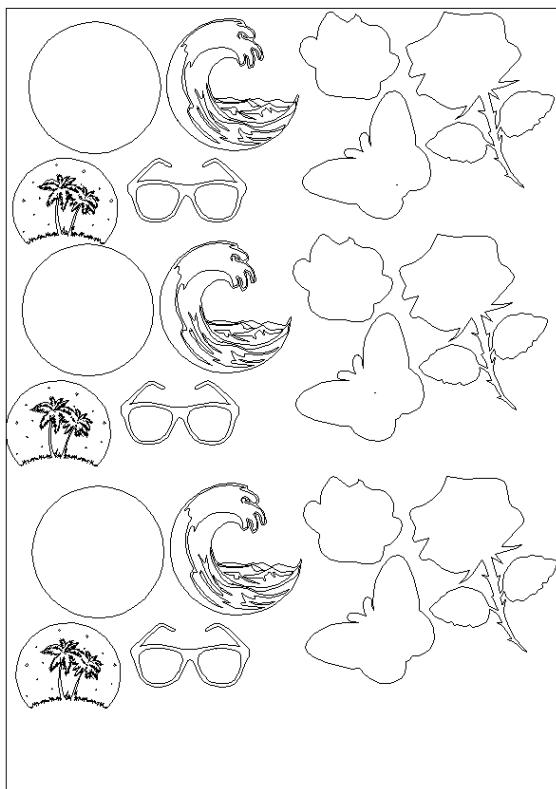
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Appendix

Vinyl cutter illustrator files:

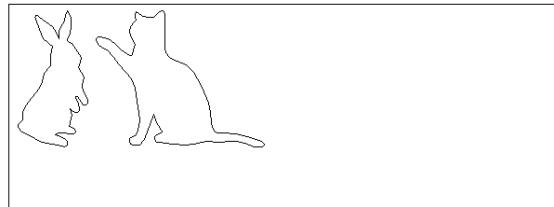
Black



Dark blue



Gold



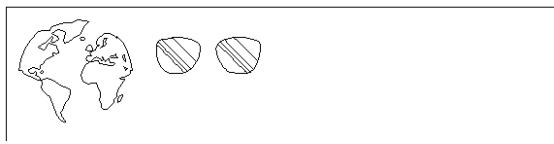
Green



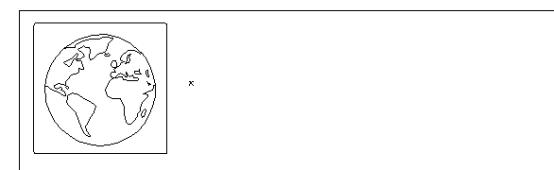
Grey



Light green



Medium blue



Orange



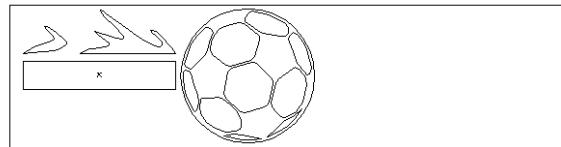
Purple



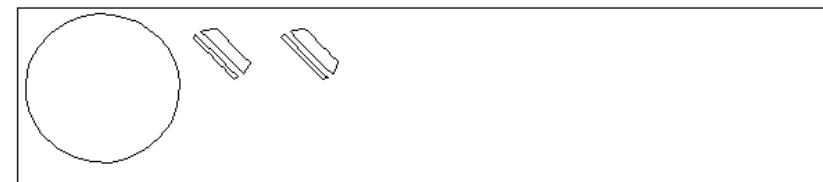
Red



White



Yellow



Service website mockup:

Home

Packs

Design your own

Contact

Wrapid

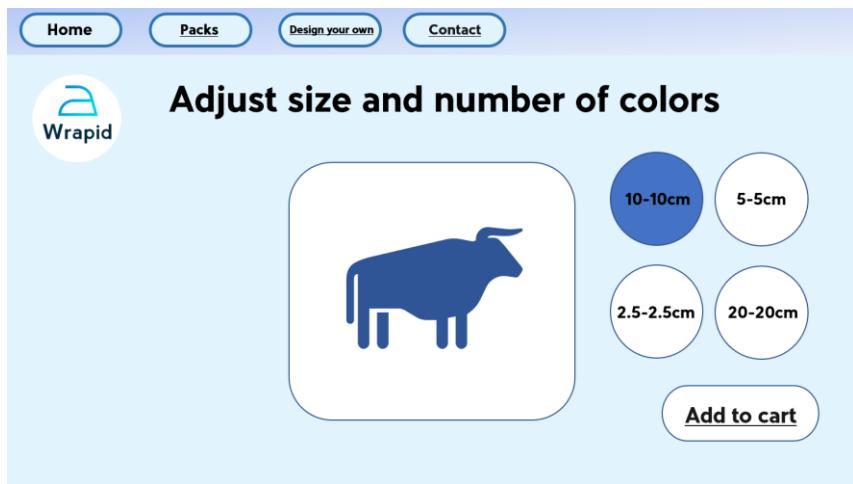
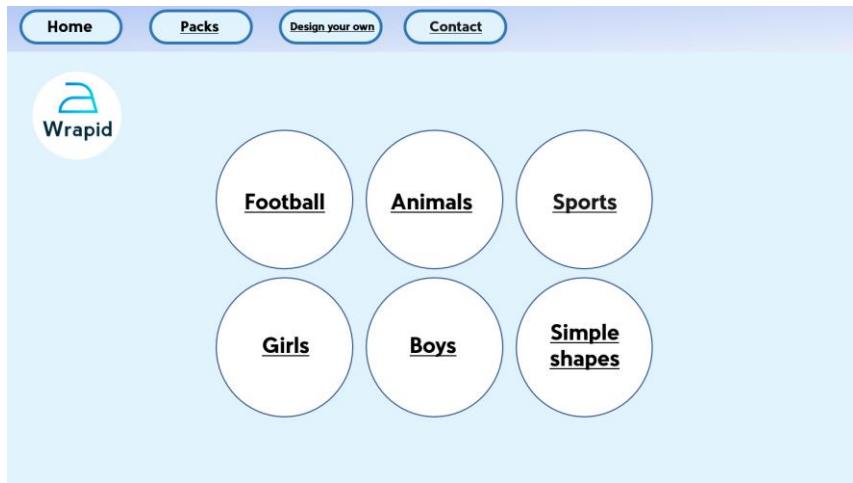
Home

Packs

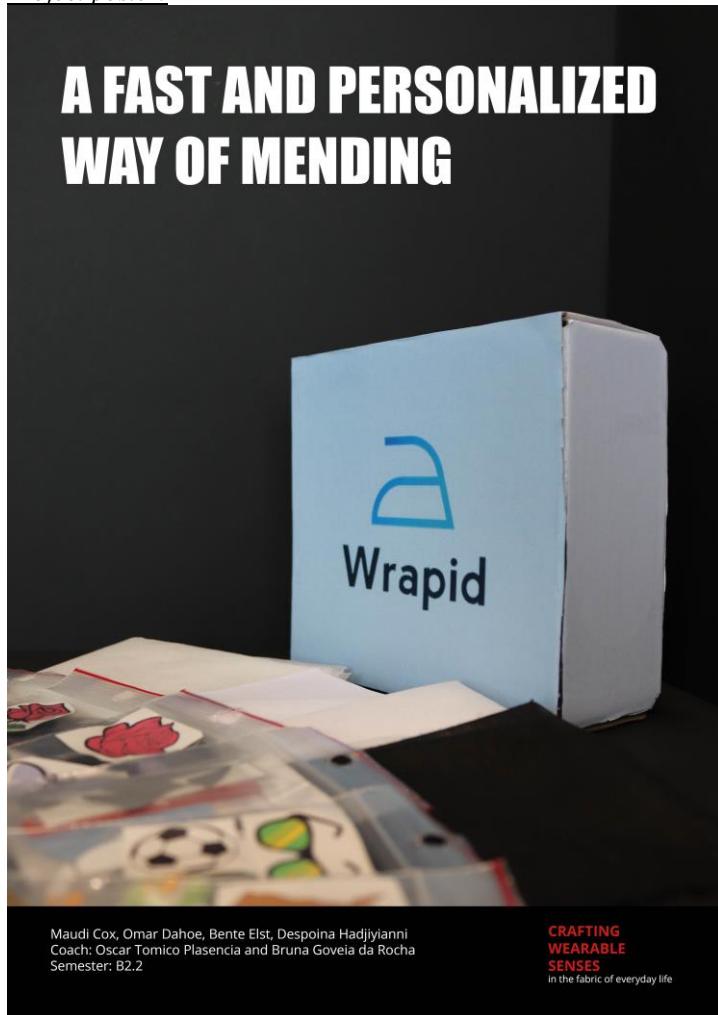
Design your own

Design your own

**Upload
your
picture**



Project poster:



Product pictures:







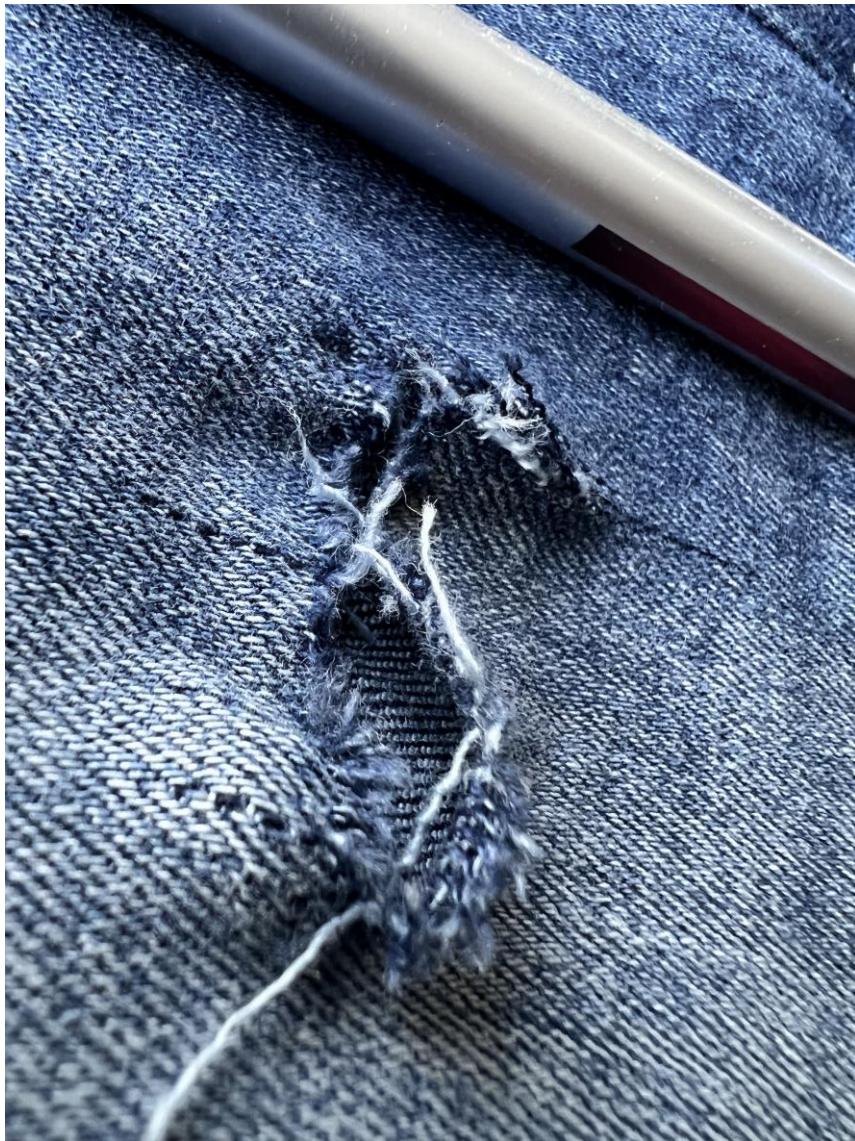


Process pictures:





























Workshop's Observational data

PARTICIPANT 1: HELENA

03-06-22:

- do you normally repair clothes:

No i dont have much skill but they're often old as well. So that's why i'm interested in this!

- we're preparing a new method

Bente shows the kit:

- Nice !

Workshop begins:

- Despina explains what we did with patches and vinyls and explains the method
- Bente explains about the patches themselves
 - o The participant follows along
- Despina explains that we also want to try a personalized way
 - o You can send in a cartoon or superhero etc

Questions: kids were 8 and 5

- “I feel like I want to experiment with it! It's very cool”

What do you think about having this kind of repairing tool

‘i would probably use it!’

If there was a service that you could sent your own design would you use it

‘It's nice to have a service with pre-made designs but also an option that you can send something in yourself’

Would you like someone to do it for you?

‘no it's very easy so i would do it myself. Because when they're this young it's not needed to pay someone to fix it’

‘just send me the patches because it's very easy to do’

What do you think about making a pattern out of it?

‘I think my kids would love this. To play around with it’

‘Especially with fun patterns the kids would engage with the repairing as well. They would like it a lot!’

‘I'm also looking for easier ways to shorten pants because I already have enough trouble with that’

She doesn't want to try out something with needle and thread

‘I would imagine that when my kids see this they want to put the patches on everything!’

Do you think this is nice for other people like students as well?

‘maybe for students if they like to customize it. More as a design’

‘If there was on the website an example with a design already made --> suggestions on the website on how to use the patches --> inspiration where you can put the patches’

Important questions:

- Would you like to let someone else do the patches?
 - o No I would like to do them myself
- I wouldn't personalize it
- For younger kids I would have nice pictures like basketball and stuff
- For some kids the plain ones are better because they're teenagers and don't want illustrations
- Sometimes holes are very big as well
- It wouldn't interest me to discuss with my son what they would like on the clothing. I would just mend it.
- It's nice to have an order about in which order the vinyls need to not mess it up

- Images could help more with all the steps
- See both the back and the front side (of the fabric and the vinyls)
- With the fusible it's more in the touch otherwise you can't see --> let people know which layer is what

Experience kits:

- Did you like the method?
- What did you like?
 - o I don't have to sew and it's going to last
 - o I think it's very good and these patches bend but the embroidery ones don't
 - o I do like the method! I stitch anyway but this is faster and it looks nice modern and fun
- Would you work together with your kid for designs
 - o No I would repair the clothes, I do all the work.
 - o I would definitely ask my children first because they're very opinionated
 - o It depends on the age if you can do it together but it is nice that you could do it together
 - o For most frequent and simple things I would do it myself but for other things I would let them choose a design
 - o My kids would be scared of the double layer
- Which method would you use stitch or vinyl
 - o Vinyl is way faster
 - o But it depends on the kind of damage of the clothing and the area
 - o The knee gets damaged very often. Is vinyl more robust? --> No it's not but you can put another layer on it but it gets stiffer
- What method would be more attractive or appealing --> would you do it sooner
 - o Yes if this service is available I would have mended these clothes right now
 - o The personalisation helps because you could see what helps the kind of damage the clothing has
 - o Patches is ideal because kids are growing up fast

- If we made a website would you like to see design inspiraitons and suggestions
 - o Yes! It would help
 - o Examples are always good
 - o If you're doing the website you have to know what you're cateirng the website to.
 - o Show types of personalisation you expect the kids to like (so trends that kids are liking at the moment)

PARTICIPANT 2: 8 (SON) AND 11 (DAUGHTER)

Certain Actions /Using the components	Important Quotes	Other Important notes (questions)
It's not a normal hole but is kind of scathed	“my daughter doesn't want to throw anything away so I would like to repair more”	“is there any time needed for the things to cool down in between”
Forgot to peel off the the first layer before adding a new one	“I like repairing clothes”	“what would you do with the extra threads of the hole”
	“we would use it more if it was personalized” They play they're own	

games and like the characters” “my children would design and like to draw”		

PARTICIPANT 3: 11 (BOY) AND 14 (DAUGHTER)

Certain Actions /Using the components	Important Quotes	Other Important notes (questions)
Uses thread first because the hole is too big and needs loose vinyl to cover it.	“Now that I stitched it I can use a smaller invlisaline thing”	“on what fabrics was it tested?”

Follow the manual after stitching	“mostly boy that has damaged clothing”	“is this vinyl regular vinyl or for clothes?” It's heat transfer vinyl
Irons the vinyl again after peeling off just to know for sure	“I really like it” “i don't know if it's faster but I think my kid would like it” “it looks more modern”	“would you sell the raw pieces of vinyl next to the personalised or premade ones as well?”
	“I could be a customer! “ but I need the big pieces It's nice that you can iron it on again and again	
	“My daughter is 14 and starts to personalize her clothes with paint. I could see her personalizing with these patches”	
	“my daughter would like to find paintings that she likes” --> “she's very into circular economy’ ‘in secondhand clothes as well	
	“she would enjoy the precdeure”	

PARTICIPANT 4: 11 YEARS OLD KID

Certain Actions /Using the components	Important Quotes	Other Important notes (questions)
	“I usually stitch clothing”	“which side do you use for the flisaline?”
	“after 3 or 4 months the clothes go to a second hand store”	“why do you have to cut two pieces?”
	“sometimes I use patches”	“does it come off after some time?”
	“as long as you don't tell that you're mending it they're okay with it”	“so the shiny side has to be up?”
	“the grainy vinyl is similar”	“would this work on satin, woolen clothes and tafita”? ”
	“it's nice if it says what is the first layer and what's the second”	



Kit Manual

STEP 1
Open the box and see the elements that they are inside

STEP 2
Take two pieces of vaseline cut one piece just slightly bigger than the hole and one piece 1 cm bigger than the hole. Place the bigger piece of vlieseline on the back of the tear/hole with the sticky side facing the fabric.

STEP 3
Place parchment paper on top of the vlieseline and iron the vlieseline on for 5 seconds. Place the smaller piece of vlieseline on the front of the tear/hole with the sticky side towards the fabric and iron this on as well.

STEP 4
Grab your vinyl design, this should be big enough to cover the vlieseline on the front. Place the vinyl patch with clear plastic on the top side on the tear/hole, covering all the vlieseline on the front.

STEP 5
Place parchment paper on top of the vinyl and iron the vinyl for 10 seconds while slightly pressing down and moving the iron around in circles/strokes of at least 2 cm. Let the vinyl cool down for 30 seconds and peel of the clear foil.

STEP 6
if you have a multicolor design: after peeling of the foil, place the next color on top and repeat the previous two steps.

Workshop Set up

Schedule/Agenda

1. First **introduce themselves** for the records their age their occupation and their kids' age/ ages.
2. **Ask them about their pre skills on mending** and their pre knowledge
 - a. Have you repaired clothes in the past?
 - i. If yes describe me a bit your experience (What did you use? What did you do repair)
 - ii.
 - b. What mending skills do you have?
 - c. Do you like repairing clothes
3. **Briefly describe our proposal, vinyl patches a tool to personalized patching** up clothes or customize patches. Give them the kit and the manual.
4. **Imagine that these patches are personalized designs based on what you kids would like** (ex. Super heroes, cartoons)
5. **Cocreate with us the patches – explain how to make them** and also give them the manual to see if the instructions are clear enough.
6. **Show them examples on how to make** them and mentioned the pros of this method (fast way of doing it, personalized designs, stretchy compared to the embroidered patches etc)
7. **Let them play with the patches** maybe want to test some other patches try them by themselves with the manual or cut out their own design
8. **Ask them about their experience**

- a. Did you like the method we used?
- b. Would you use it in the future?
- c. Would you cooperate with your kid at home to make patterns and designs together ?
- d. What you did not like while using these patches?
- e. If you had to choose how to repair your clothes what would you choose?
- f. How do you see that as a service? **Explain our ideas**
- g. Would that method be more attractive to you and engage you more on repairing your clothes or your kid's clothing?

Preliminary Interview's findings - Clustering



Below you can find the ERB form

[ERB review form education DURATEAM.docx](#) -

Consent Forms

[Consent form .docx](#)

Transcription of the Preliminary Interviews**20-04-2022 – 10:00 - Wieke Asselbergs**

W.Asselbergs@zwijsen.nl

Questions in advance:

- Bring clothing in advance, or send pictures of damaged/dirty clothing of the kids

Questions:

- How old is your kid/kids?
 - 9 and 12
- What grade is he/she in?
 - Grade 5 and freshmanyear of highschools
- How often does your kid damage their clothes?
 - Almost everyday
 - food, sand
- What places does your kid damage their clothes?
 - Jeans mainly on the front
 - Dropping food on the front of their sweater
 - On jeans some rips, mainly on the knees
- What kind of clothes damage most often?
 - Everyday clothing
 - Shirts, jeans and sweaters
 - Sports clothing
- Does your kid care if their clothes get damaged/dirty?
 - No, they dont mind wearing it again.

- At what point of damage do you throw away or repair the clothes?
 - Depends
 - If jeans have rips on the knees I do not repair them
 - Shirts and sweaters dont get damaged that much, its mainly stains. When I cannot remove the stain, I throw it away
 - Its worse if the clothing was expensive, but that does not matter if the damage is too big
 - Damaged clothes will not be handed down
 - Clothes of better clothing can be washed at higher temperatures, which helps better with removing stains
- Have you repaired their clothing often or do you throw it away?
 - I dont repair them that much, if I want to do it my mother does.
 - What methods do you use to repair the clothes?
 - Sewing it back togehter with a sewing machine
 - If i use a patch, the kids really don't like it and don't want to wear it
- **Is it important for you to repair the clothing and why?**
 - No i do not really repair. For me it is more important that it is perfectly clean and in a proper state. I rather give my kids a piece of clothing that is damaged

a bit, than giving them something that is repaired.

- If you do not repair clothes: Would like to repair clothes? What methods would you like to use?

- What new ways would you try to repair clothes? (new ideas!)

- Using glue to stick a hole together.

- Using clear glue.

- - set up another block of questions more involved into design. (new techniques, designs, what do they miss in the repair process)

- In what way could this process of repairing be improved

- Are there any improvements you think of.

- Do you miss anything in this repair process that could help with; comfort, speed, time, ease of use?

- Having a service from a clothing store. A concept where they could repair your clothing

- Je hebt kleding reparateurs maar met kinderen is het zonde als het gelijk helemaal op is. Ik probeer ook veel dingen door te geven aan anderen. En dat het niet zo duur is. De kwaliteit maakt heel veel uit. Als het snel gekrompen, verwassen of kapot is. Vlekken hebben ook te maken met de kwaliteit. Bij sommige stoffen pakt het sneller.

- I have some repair kits, but it is not nice if it empties real quick.

- I try to pass on a lot of clothing. I also buy clothing that is not expensive. I do not really mind what the quality is. Stains also have less impact on higher quality clothing.

- What products do you already use and how is the experience with it.

- Do you experience any difference in quality regarding more expensive repairing kits.

- What clothes are meaningful to your kid?

- My 12 year old does not mind
 - Only if it is comfy
- My 9 year old does
 - If he likes it
 - If it is comfy
 - It also has to match with each other.

- Does your kid care about what he/she wears?

- Joggers!!! Because they are really comfy

20-04-2022 – 11:30 - Nancy van Gestel

E-mail: nvangalen@hotmail.com

Questions in advance:

- Bring clothing in advance, or send pictures of damaged/dirty clothing of the kids

Questions:

- How old is your kid/kids?
 - 7 and 10
- What grade is he/she in?
 - Grade 3 en grade 6

- How often does your kid damage their clothes?
 - Sometimes everyday, 2 times a week and once a month
 - How older they get the less they damage their clothes
 - They damage their clothes more in the winter than summer
 - When they were smaller they used to fall way more
 - They nowadays damage their clothes while playing
 - When they were at the age of 4 and 5 it was way worse
- What places does your kid damage their clothes?
 - They rip their sweaters when they try to crawl or get stuck on something sharp
 - On his but or knees due to skateboarding or scootering
 - Mostly on the knees
- What kind of clothes damage most often?
 - Everyday clothing
 - Sweaters
 - Jeans
 - Joggers
 - At HEMA they have jeans with stronger knees that last longer
 - Sometimes is sew patches beforehand to elongate the lifespan of the jeans
 - Sports clothing

- Football shorts are short so they don't get damaged on the knees
- Does your kid care if their clothes get damaged/dirty?
 - They don't want a patch because it does not look cool
 - So I fix them just using hand sewing
 - I sometimes also cut the jeans into shorts
 - From grade 4 they start to think about what they want to wear
- At what point of damage do you throw away or repair the clothes?
 - When jeans have a big hole that doesn't look nice
 - Pilling on joggers. This is not a problem on joggers than have a pattern
 - Chewing on the sleeves. I repair this using handsewing, but from the age of 10 they don't like it that much
- Have you repaired their clothing often or do you throw it away?
 - What methods do you use to repair the clothes?
 - Handsewing
 - Using patches
 - Beforehand making the clothing more durable on certain places.
 - Is it important for you to repair the clothing and why?
 - Yes it is really important for me, Jeans are easily 20 euro. And if my kids damage

their jeans on our tile floor they easily get damaged. It is also nice for them to understand that it is more sustainable.

- If you do not repair clothes: Would like to repair clothes? What methods would you like to use?
- What new ways would you try to repair clothes? (new ideas!)
 - Die patches om te sparen
 - My 10 year old does not want any patches on his clothes, because he thinks it is lame.
 - I would focus on sewing techniques that are easy and invisible.
- - set up another block of questions more involved into design. (new techniques, designs, what do they miss in the repair process)

They wipe their hands on their backs --> on their ass (the tops of the hands)

Eldest now keeps going into the park and comes home pitch black. The youngest is hiding in the bushes

You can't get your socks clean

You get your clothes clean well

Not all paint goes out

At out of school care days old clothes

Normal clothes to school

--> if I couldn't get it out, it went away.

--> if it doesn't just come out, I put it in the wash.

- They pull the strings out of sweatpants. Some have it worse than others

- some strings are only there for decoration, which is inconvenient.

- jeans have elastic with a button to tighten

- at H&M they are usually too wide

- In what way could this process of repairing be improved
 - Are there any improvements you think of.
 - Do you miss anything in this repair process that could help with; comfort, speed, time, ease of use?
 - You really have to search to close something handy
 - ○ Shoes --> you can't do that if you have to put on a new press stud. They often assume 'more beautiful' but it could be a lot more functional
 - ○ Children do not wear it if it does not fit well, nor if it no longer looks good. Ordinary buttons cannot close them properly.
 - ○ My kids only want some kind of sweatpants because they don't like jeans. Jeans are too stiff fabric. What products do you already use and how is the experience with it.
 - Handsewing.
 - Using small jeans fabrics to repair
 - Do you experience any difference in quality regarding more expensive repairing kits.

- What clothes are meaningful to your kid?
 - 10: joggers (short) with a t-shirt. Not too expressive.
- Does your kid care about what he/she wears?

- 7: He orders a lot, but he has his favorites. He also chooses his own clothes
- 10: He goes shopping with me and chooses his own clothes. He cares a lot about what he wears

- Showcasing our 4 new concepts on frame 3

20-04-2022 – 13:30 - Jeske

E-mail:

Questions in advance:

- Bring clothing in advance, or send pictures of damaged/dirty clothing of the kids

Questions:

- How old is your kid/kids?
 - Girl of 11 in grade 8
 - Boy of 10 in grade 6
- What grade is he/she in?
- How often does your kid damage their clothes?
 - boy ->Usually, mostly during football with sliding. This creates holes in the knees
 - Girl --> very careful
 - Both normal clothing and sports clothing
- What places does your kid damage their clothes?
 - knees
- What kind of clothes damage most often?
 - Everyday clothing
 - Sports clothing
- Does your kid care if their clothes get damaged/dirty?

- boy, nee
- girl is very careful of her clothes
- At what point of damage do you throw away or repair the clothes ?
 - I buy clothes in shops but also get clothes from my cousin. If it's used I won't fix it. My mother is good with a needle and thread and then makes a logo on it. (where the mark is usually located such as at the bottom of a sweater)
 - My mother used to make patches on her knees, but they really don't want that.

Have you repaired their clothing often or do you throw it away?

- What methods do you use to repair the clothes?
- Is it important for you to repair the clothing and why?
- If you do not repair clothes: Would like to repair clothes? What methods would you like to use?
- What new ways would you try to repair clothes? (new ideas!)
 - You can easily find new clothes at cheap stores. It is also knowledge and skill.
 - Many people have little knowledge and time and the alternatives are very cheap and easy.
 - People who are more sustainable are more likely to have it made- set up another block of questions more involved into design. (new techniques, designs, what do they miss in the repair process)

- In what way could this process of repairing be improved
 - Are there any improvements you think of.
 - Do you miss anything in this repair process that could help with; comfort, speed, time, ease of use?
 - Mother has had sewing lessons so she can do everything already.
 - On tiktok you sometimes have those videos that show how to repair clothes easily
 - For the awareness of the children it is not a problem to have 'made' jeans
 -

What products do you already use and how is the experience with it.

Do you experience any difference in quality regarding more expensive repairing kits.

- What clothes are meaningful to your kid?
- Does your kid care about what he/she wears?
- Sociale aspect
 - Girls do care about if their clothes are dirty or damaged.
 - Je also have rentable jeans to support reusing them. This could be an option if it would be more fashionable.
 - Getting a sale on clothing when you bring your old ones.

- Showcasing our 4 new concepts on frame 3

- A patch could work with children. It does matter on what spot the patch is placed
- Seethrough already exists.
 - Pathes last up to 2 washes.
- Aesthetic Embroidery mainly for girls

Using old or damaged clothing to make new clothing. Like for example making a t shirt out of a dress or shorts out of jeans.

20-04-2022 – 14:00 – Lieveken Vester

E-mail: Liefmobiel@hotmail.com

Questions in advance:

- Bring clothing in advance, or send pictures of damaged/dirty clothing of the kids
- How old is your kid/kids?
 - 7, 9 and 11
- What grade is he/she in?
 - Grade 4, 6 en 8
- How often does your kid damage their clothes?
 - Differs per kid
 - The middle one the most: The boy always had holes on his knees.
 - Chews on his shirts and always has dirty sleeves
 - The youngest : soap, sand, mud, glue and paint
 - My oldest daughter does not really damage her clothes anymore
- What places does your kid damage their clothes?
 - jeans: mainly knee area

- daughters: More sweaters and tshirts that get stains
- What kind of clothes damage most often?
 - Everyday clothing
 - Sports clothing
- Does your kid care if their clothes get damaged/dirty?
 - My boy does not care, he keeps wearing them
 - My daughter cares more about it, she for example asked my anxious, 'are u able to get the stains out??'.
- At what point of damage do you throw away or repair the clothes ?
 - If the buttons fall off.
 - I can fix small rips
 - Fixing loose ends, but sewing them together
 - Fixing a loop on a jacket
 - With stains i cannot remove, i throw them in the recycling bin.
 - When they were smaller i used to use patches, but they do not like it anymore
- Have you repaired their clothing often or do you throw it away?
 - Yes, i also make my own clothing with a sewing machine
 - What methods do you use to repair the clothes?
 - Making shorts out of jeans

- Stains are the most difficult, especially the ones from bubble soap.
- Is it important for you to repair the clothing and why?
 - I try to repair most clothes
 - If you do not repair clothes: Would like to repair clothes? What methods would you like to use?
- What new ways would you try to repair clothes? (new ideas!)
 - ○ It is very typical especially with boys pants that knees are a really big problem. Some pants are better protected than others. That differs greatly per material. But especially in boys, knees break very quickly.
 - ○ Zippers, if they are broken it will be thrown away
 - ○ If you want to make a drill on a trouser leg, it is not useful for smaller trousers. On most sewing machines, that foot is too wide. If that were a lot narrower, you can easily slide children's clothing around it. To get smaller pieces of clothing underneath
 - ○ Arms and legs of pants is a lot of fiddling
 - ○ Piece of fabric behind the jeans is super nice but you can never do that with a sewing machine. You have to do that by hand again, but then it is not sturdy- set up another block of questions more involved into design. (new techniques, designs, what do they miss in the repair process)

- In what way could this process of repairing be improved
 - Are there any improvements you think of.
 - Do you miss anything in this repair process that could help with; comfort, speed, time, ease of use?
 - What products do you already use and how is the experience with it.
 - Do you experience any difference in quality regarding more expensive repairing kits.
 - I have a very nice sewing machine from Brother, so i cannot compare it to cheaper ones.

- What clothes are meaningful to your kid?
- Does your kid care about what he/she wears?
- My children have no problem with that. They are already happy that they can handle it again
- I'm not going to make fun of them so don't do anything crazy.
- As long as you don't see it very well
- Sometimes on the knee, but my son doesn't care that much
- Labels are annoying -> especially annoying for children
 - ♣ At the hema they press into the fabric
 - ♣ Sissy boy has spiky labels
- It should also be comfortable for children, especially

- Showcasing our 4 new concepts on frame 3

- Patch: Yes I like it, I can imagine that it would work.
 - How to apply them would make a difference, regarding the parents.
 - Ironing is very handy, but they tend to let loose
 - With handsewing I could imagine that it is difficult to apply
- Glue idea
 - No experience with it. Sounds very interesting, also of glueing patches.
- Aesthetic Embroidery
 - Looks very nice
 - Really creative
 - I have never tried it, but i think that I am able to do it.
 - You should especially look for interesting ideas.
 - You would need help with that
 - You have to do good research to find a way that it does not damage quickly.