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Rethread your thinking: Changing Teen Habits to Reduce Overconsumption in Fashion.

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Abstract

The fashion industry significantly contributes to environmental and social issues, with teenagers forming a key demographic driving fast fashion consumption, due to affordability and easy availability. While many young people are aware of the problem, they often remain stuck in the contemplation phase of behavioural change, recognizing the issue but not yet preparing to act. Much attention has been paid to the intention-action gap, but this project focuses on the lesser-known gap between contemplation and preparation, where the earliest internal shifts must occur.

This bachelor graduation project explores how design can support teenagers in progressing from contemplation to preparation around sustainable fashion behaviour. Using the Creative Technology Design Method, a concept was developed through ideation, prototyping, and testing. The result is a physical card game that promotes reflection, awareness, and critical thinking, linked to a website with additional challenges, educational content, and opportunities for social sharing.

The concept was evaluated at a Dutch high school with 14 teenagers, using a mixed-methods approach that included both qualitative insights and quantitative data, analysed using the Wilcoxon signed-rank test. Findings show that while the card game does not directly change behaviour, it was well received and effective in raising awareness and stimulating reflection on sustainable fashion in a low-barrier, social format.

Ultimately, this study demonstrates that playful, reflective tools can help bridge the early gaps in behavioural change, nudging teens toward sustainable mindsets, even if full behavioural transformation takes more time and further intervention.

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Chapter 1

Introduction

The fashion industry, and particularly the fast fashion industry, has become a focal point of discussion when talking about environmental sustainability. Fast fashion refers to the rapid design, production, and consumption of inexpensive clothing that fits current trends [9]. This culture is characterized by a high turnover rate, excessive consumption, and rapid disposal of clothes [10]. The desire to keep up with micro trends and foster constant consumer engagement invites a culture of mass consumption and disposability with short shelf lives and discarding of clothes after only a few wears. As a result, due to the high demand for raw materials, these practices are depleting natural resources and perpetuate social inequalities through exploitative labour.

The environmental impact of fast fashion cannot be ignored. The industry makes up 10% of the total global carbon emissions [11], thanks to energy-intensive production processes such as textile dyeing, fabric manufacturing, and transportation, but also raw material extraction for materials such as polyester [9]. Furthermore, the industry is very water-intensive. It is estimated to use between 79 billion [12] to 93 billion cubic metres of water annually [13]. One T-shirt can cost up to 2.700 litres of water [9] [14] [15] [16] and one pair of jeans up to 7500 litres [9] [17]! All this need for water leads to scarcity in the production regions [18], and the water strain is only increased by chemical contamination [9]. Moreover, textile production involves using hazardous chemicals, resulting in approximately 20% of global industrial water pollution [16]. Synthetic fabrics such as polyester shed microplastics when washed, contributing to marine pollution and entering the food chain [15]. In addition, many dyes and finishing agents contain heavy metals, formaldehyde, and other toxic substances that leach into rivers and groundwater, affecting aquatic ecosystems and human health [19]. The rapid turnover of fashion trends also leads to substantial textile waste, with an estimated 95 million tons discarded annually [15]. Each year, the average European consumes around 26 kilograms of textiles and throws away about 11 kilograms. While some used clothing is exported outside the EU, the majority, about 87%, ends up in landfills or is destroyed. This disposal process contributes to greenhouse gas emissions, including methane. Less than half of discarded clothing is collected for reuse or recycling, and only a tiny fraction, around 1%, is recycled into new garments [15].

All this environmental damage is fuelled by high consumer demand, especially among the younger generations. Teenagers are important buyers in the fast fashion market, and social media platforms like Instagram, TikTok, and Snapchat play a crucial role in developing their fashion choices. The industry can bring fashion trends to a larger audience quicker than in the past. And with the rise of "haul" videos, where influencers showcase large quantities of clothing, it encourages viewers to mimic similar consumption patterns. The "see now, buy now" culture, promoted by brands such as Shein and Fashion Nova, creates an environment where immediate gratification is prioritized over long-term sustainability. Additionally, the algorithmic nature of these platforms reinforces trends through targeted advertising, making fast fashion even more appealing and acces-

sible to impressionable young consumers [16]. The desire for social acceptance and identity expression drives teenagers to keep up with rapidly changing fashion trends, often leading to frequent and impulsive purchases. Studies indicate that many teenagers engage in compulsive shopping behaviours, fuelled by the accessibility of fast fashion through online retail and frequent discount promotions [20]. Furthermore, peer pressure and the fear of "outfit repetition" contribute to a mindset where clothing is seen as disposable rather than a long-term investment [21]. Fast fashion brands capitalize on these behaviours by offering trendy clothing at low prices, making them particularly attractive to young consumers with limited budgets [16].

Encouraging teenagers to adopt sustainable fashion habits presents several challenges. One major barrier is the perception that sustainable fashion is less trendy or more expensive, deterring teenagers from making environmentally conscious choices [22]. Many ethical brands struggle to compete with the affordability and marketing power of fast fashion companies, making sustainability seem exclusive or unattainable. Additionally, aggressive marketing tactics and the constant introduction of new styles create a sense of urgency to purchase, reinforcing a culture of overconsumption [16]. Despite a growing awareness of environmental issues, there is often a disconnect between knowledge and action. Many teenagers understand the detrimental effects of fast fashion but continue to participate in it due to convenience, price, and social influence [16] [23] [22]. Greenwashing, the practice of misleading consumers about a brand's environmental efforts, also poses a challenge, as many fast fashion companies claim to be sustainable without making meaningful changes to their supply chains [24]. Furthermore, the lack of educational resources on ethical consumerism prevents many young consumers from fully grasping the impact of their shopping habits [22].

The need to encourage sustainable consumption among teenagers has never been more urgent due to environmental and social challenges posed by the fast fashion industry. Even though there is a growing awareness of fast fashion on the environment, teenagers keep consuming fast fashion and engage in impulsive purchasing behaviour. This all contributes to the cycle of overconsumption and waste. All these factors lead to the research question of this paper: **How to design a product that helps to effectively influence teenagers to reduce their intent to consume fast fashion?** This will be explored through the following sub-research questions (SRQ):

- **SRQ 1:** What are the environmental and social effects of fast fashion?
- **SRQ 2:** How are teenagers' shopping habits influenced?
- **SRQ 3:** What is the role of social media in the consumption of fast fashion?
- **SRQ 4:** Why do teenagers keep buying fast fashion despite knowing the consequences?
- **SRQ 5:** What psychological and behavioural change strategies exist that could be applicable in the design of this product?
- **SRQ 6:** How effective are current products/interventions on the market?

Chapter 2

Background Research

2.1 Fast Fashion and Its Environmental and Social Impact

The fast fashion industry has revolutionized the way consumers approach clothing, delivering trendy, cheap garments at the blink of an eye. Brands like H&M, Primark and Shein have built empires by offering almost instant responses to fashion trends by producing entire clothing collections in a matter of days. While this satisfies the consumers' desire for variety and affordability, it comes at an environmental and social cost. Ranging from climate change to water scarcity, excessive waste, pollution, microplastics and labour exploitation. This chapter explores the widespread impacts of fast fashion.

2.1.1 Textile Waste and Landfill Overflow

One of the most visible environmental consequences of fast fashion is the enormous amount of textile waste it produces. As clothes are usually produced fast and cheaply and designed to follow micro-trends, they tend to wear out quickly and are only meant for a few uses. As a result, they are often discarded instead of being reused or recycled. Research shows that over 85% of all textiles produced globally end up in landfills each year [12]. In the United States alone, this equates to roughly 11 million tons of clothing waste annually [25]. Many of these garments are made with synthetic materials such as polyester or non-biodegradable fabrics. Moreover, when burning garments, they release harmful greenhouse gases and toxins into the air, contributing to climate change and public health hazards. Even donation systems are overwhelmed; studies show that a lot of donated clothes are eventually still discarded due to the low resale value or poor quality [26].

2.1.2 Labour Exploitation and Ethical Concerns

As the garments are sold for very cheaply, the fast fashion industry heavily relies on low-cost labour from developing countries to maintain profit margins. Workers there often endure exploitative working conditions, including extremely low wages, unsafe work environments and long working hours without sufficient labour rights protections [27]. The 2013 collapse of the Rana Plaza factory in Bangladesh killed more than 1100 workers and brought global attention to the dangers [28]. Despite public outrage and some promises from brands to do better, many workers still face the same problem [28]. Some factories even fail to meet the minimum wage requirements [27]. In addition, many workers experience verbal abuse, forced overtime and are restricted from speaking out about abuse or forming unions. These ethical issues, real critical questions and concerns about the cost of cheap fast fashion items.

2.1.3 Water Usage and Chemical Pollution

Fast fashion also uses up an enormous amount of water, especially in the production of cotton and denim. Making one pair of jeans can require up to 7500 litres of water [12]. Much of it is used during cotton growing and dyeing. This puts a lot of pressure on water supplies in areas where they are already struggling with water shortages, like parts of Central Asia and India. However, it is not just the overconsumption of water, but the fashion industry is also a major polluter of water [29]. Toxic chemicals used in dyeing and finishing clothes, such as heavy metals and dyes, often end up being dumped into rivers and lakes without proper treatment. This affects aquatic life and poses serious health risks to people who rely on these water sources or farming [29].

2.1.4 Overproduction, Consumer Culture, and Carbon Emissions

The fast fashion business model is built on overproduction and relies on overconsumption. Brands constantly release new collections, which are designed and produced in days, just to encourage people to keep buying new items and follow the trends. This cycle of buying and discarding not only generates more waste but also adds to the industry's carbon footprint. From growing raw materials and making fabrics to transporting finished items around the world, every part of the process uses energy and emits carbon [30]. The fashion industry is responsible for about 10% of the global carbon emissions, which is more than emissions from international flights and shipping combined [12]. The use of synthetic fabrics like polyester, which are made from fossil fuels, and the thousands of kilometres clothes have travelled before reaching a store or a doorstep, increases the carbon impact.

2.2 Teenagers' Shopping Habits and Social Influence

Teenagers are key consumers in the fast fashion industry due to their desire for self-expression, social belonging and forming their own identity. Clothes allow them to express their personal style and fit in with social groups.

2.2.1 Social pressure and Peer influence

The influence of social norms and peer pressure, both online and offline, is critical for young consumers in choosing what to buy. Social norms, whether explicit or implicit, guide behaviour and define what is socially acceptable [31]. Multiple papers agree on the fact that, as social creatures, young consumers often seek approval and acceptance from their peers, which can drive them to align their behaviour with social trends [32] [33] [34] [35]. Clothes are often a reflection of a subculture, social circle, and therefore an essential tool for social connection [36]. The desire to be included in the latest fashion of friends typically leads young people to adopt fast fashion trends [32] [33] [34] [35], which are common in young social circles. Moreover, peer groups not only affect fashion choices before purchase by setting norms, but they also validate one's purchase [32]. Peer pressure can push individuals to purchase items they may not have considered before [34]. And they may also encourage increased consumerism, as young shoppers might feel compelled to keep up with trends [34].

2.2.2 Identity, Belonging, and Instant Gratification

Furthermore, cultural and socio-economic factors influence how peer groups interact with fast fashion. In certain social circles, being able to showcase the latest trends is a sign of status, while in other circles, groups might prioritize sustainable fashion and ethically sourced clothes [36]. In addition, since fast fashion brands

offer trendy clothes for a low price, young consumers can update their wardrobes regularly without significant financial strain [36]. Fast fashion is an affordable way to align with peer expectations quickly. Another factor influencing teenagers' shopping habits is the fear of outfit repetition. Many young consumers fear being judged for wearing the same outfit multiple times. This contributes to the mindset of disposability of garments and consumption culture. Social media is a big contributor to this mindset, especially with influencers and celebrities' constant display of new outfits. In order to copy this lifestyle, teenagers feel the pressure to grow their wardrobe with cheap low-quality items that will be discarded after only a few wears. This perpetuates a "quantity over quality" mentality.

2.2.3 The Role of Friendship in Shopping Habits

Shopping with friends also often serves as a social activity. In that case, decisions on purchases are made collectively, either for enjoyment, moral support or guidance. Friends assist each other with choosing, especially if one is hesitant or needs support in contemplating [37]. They add that when someone gets immediate feedback and has their friends supporting their choices, people are more inclined to buy an item. The social interaction boosts confidence, brings groups closer together, and reinforces the group's image and consumption patterns [37].

2.2.4 Marketing Factors

Marketing tactics such as scarcity marketing or using the phenomenon of Fear of missing out (FOMO) play a significant role in fast fashion consumption. They have been proven effective in pushing teenagers to buy clothing. The anxiety that comes from the FOMO is triggered by seeing others participate in the latest trends, and can drive people to make impulsive fashion purchases in an attempt to fit in [38]. This anxiety, driven by the fear of being excluded from desirable experiences, reinforces the desire for instant gratification and the need to project a socially approved image [39]. As a result, young shoppers are more likely to buy items that align with current trends, rather than considering factors such as sustainability. Another tactic used by brands is scarcity marketing, making trends seem exclusive and short-lived. Especially in the case of timed discounts or limited items, it creates a sense of urgency, making the FOMO act up [39] and pushing consumers to make quick purchasing decisions.

2.2.5 Biological and emotional factors

In addition to social and cultural influences, biological and psychological mechanisms also play a significant role in teenagers' fast fashion consumption. During adolescence, the brain is still developing, particularly the prefrontal cortex, which is responsible for impulse control and long-term decision-making [29]. At the same time, the brain's reward system, particularly the release of dopamine, is highly sensitive during these years. Shopping, especially when it leads to acquiring new clothes or a good deal, triggers dopamine release, producing a temporary feeling of pleasure and satisfaction [40]. This makes fashion purchases very rewarding and addictive. The fast fashion model, with its endless stream of cheap, trendy items, offers constant opportunities for these dopamine hits, reinforcing impulsive buying habits. Moreover, teenagers may turn to shopping as a form of emotional coping [41]. Whether dealing with stress, boredom, low self-esteem or social anxiety, buying new clothes can serve as a quick fix to elevate the mood. This cycle is made easier by the ease with which one can buy clothes. Bought today, it will be delivered tomorrow. This makes it effortless to shop impulsively without much reflection. As a result, fast fashion becomes an emotional escape and a source of temporary comfort, which can form compulsive shopping patterns over time.

2.3 The Role of Social Media in Fast Fashion Consumption

Social media platforms have become an essential part of consumers' daily lives, significantly shaping their perception and behaviours regarding fast fashion. With social media, an entirely new online culture arises, in which unique interactions and remarkable things are happening.

2.3.1 Trends, Influencers, and Algorithms

With the rise of micro-trends, trends that only live for weeks or sometimes even days, on platforms like TikTok, Instagram, and Snapchat, accelerate clothing turnover rates. Compared to traditional fashion cycles, which were usually tied to the season, micro-trends have items going in and out of style within a matter of days. This only encourages quick renewal of their wardrobes, such as buying new, cheap clothes [41]. Especially, influencers encourage that kind of behaviour with their haul video that normalizes excessive shopping [41]. In these videos, they buy, showcase and review an excessive amount of clothes. And with the algorithms that are fine-tuned per person, pushing targeted ads and personalized content that aligns with the user's past purchasing behaviours, users are constantly exposed to new products. This makes it difficult to break the cycle of overconsumption.

Due to the high exposure to fashion content through influencers, peers, brands, and celebrities on social media platforms, consumption is heavily encouraged. The latest trends reach a large audience way quicker through social media [42]. Not only are people exposed to a lot of content quickly, but often influencers and brands have direct links to shops [42]. Items are directly accessible, allowing the user to buy an item on impulse within a few clicks. This only encourages the "See Now, Buy Now" culture. Thus, the culture promoted by fast fashion brands encourages immediate gratification. In combination with scarcity marketing and utilizing the FOMO, users are prone to rashly purchase items.

2.3.2 Online Peer Interactions

Social media facilitates interactions with peers, amplifying social comparisons. Specifically, the younger generation engages in conversations and shares opinions about products with friends and family [43]. This directly impacts their fashion decisions, due to the interactions creating a desire to adopt the same trends and consume fast fashion to conform to their social groups [37]. Nowadays, social media has the role of Electronic Word of Mouth (E-WOM) [32] where peer influence is reinforced. Young consumers are more likely to purchase fast fashion products when influencers they like, or peers, endorse them [32] [43]. These endorsements create a sense of credibility and desirability around certain brands and encourage consumers to buy similar brands or products [43]. This can also have the opposite effect, where one is less likely to purchase a product when there is less internet coverage and a lack of information about the brand [44]. Consumers are also more likely to resist influence from people they do not agree with. Furthermore, if a consumer perceives a brand negatively, they are also less likely to buy it [45]. That is why everything ties together with the image of a brand and who supports it. Social media platforms offer a space for young consumers to validate their social identity by sharing images of their fashion choices. Posting selfies or images of recently purchased fashion items allows users to gain recognition from their peers, in turn reinforcing the social pressure to keep up with trends [46]. In addition, they point out that likes, comments and shares, these interactions create an endless loop where the desire for social validation encourages more purchases, which are then showcased online to uphold status and belonging [46].

2.3.3 Brand Strategies and User Engagement

Beyond peer influence and algorithmic exposure, fast fashion brands themselves play an active role in motivating consumption through social media strategies. Many brands use real-time marketing to keep their product relevant by quickly reacting to trending hashtags and viral content. On platforms like Instagram and TikTok, brands are able to post “drops” with limited stock or limited time to create a sense of urgency and increase user engagement [47]. This strategy is called scarcity marketing, and it fuels impulse buying. Moreover, brands make use of user-generated content by encouraging consumers to post outfits and tag the brand or use hashtags [48]. In some cases, they might repost or reward people who participate in this [48]. This participatory marketing deepens the connection between brand and consumer, making the shopping experience more personalized and creating the feeling that they are part of a community. This way, consumers are not just consumers, but they are also micro influencers, creating brand awareness [48]. Brands may also gamify shopping through their apps, offering exclusive rewards, daily check-ins, loyalty programs, and discounts if you spin the wheel [49] [50]. This encourages teenagers to check in on their brand often, exposing them to clothes, persuading them with discounts and encouraging impulse consumption [50]. And slowly but surely, brands are integrating themselves into individuals’ daily lives, making shopping more fun, entertaining and stimulating [49]. As a result, normalizing constant consumption [50].

2.4 Intention-Action Gap

Even though there is an increase in awareness and knowledge about the impact of fast fashion on the environment, teenagers seem hesitant to turn to more sustainable alternatives. This phenomenon of not acting upon something despite knowing the consequences is the intention-action gap [51]. Here, individuals are aware of the “right” thing to do, but fail to follow through on that because there are barriers preventing them.

2.4.1 Perceptions

A significant psychological barrier for teenagers to avoid second-hand clothes is the perception that it is unfashionable or expensive. For many young people, keeping up with the latest trends is closely tied to their sense of identity and social belonging. Wearing what is seen as fashionable is, in many cases, almost inevitable in order to fit in. As sustainable clothing, mostly second-hand clothes, are perceived as outdated, basic, or not fashionable [52], it does not align with teenagers’ need for trendy items. Moreover, there is a prejudice that sustainable fashion and second-hand clothes lack variety, in turn not allowing people to fully express themselves in the way fast fashion offers [52]. In the mind of many teens, ethical fashion is often associated with simple, minimalist, dull designs, which can feel limiting compared to the ever-changing catalogue of fast fashion stores. This perception can discourage teens from trying out more sustainable options.

2.4.2 Accessibility and Affordability

Another issue is that sustainable alternatives are, unfortunately, not always easily accessible. For some people, it may not be a matter of style or choice, but just a lack of options. Many sustainable brands are online only or located in urban areas. Making it less visible and harder to find [53] [54]. Secondhand shops may have the same issue with the added barrier that their inventory can be unpredictable. Items may vary in quality, availability and size, making it hard to shop based on trend or specific items. Contrary to Sustainable alternatives, Fast fashion is dominating the market. Brands like SHEIN, H&M and Primark are everywhere, and

therefore offering instant, cheap, trendy clothes. Fast fashion brands are not only to be found in almost every city and mall, but also online; they are prominent players. Aggressive advertising on social media, optimized for fast, impulsive purchases, whereas shopping sustainably often costs more effort, intentionality, and research.

Sustainable and ethical brands selling new items can be expensive as they do not exploit labour and use sustainable fabrics and practices [55]. Due to this, the price will naturally be higher than when garments are made by people who get paid less than minimum wage. The consumer can end up paying more than double the cost of what they would pay for it from a fast fashion brand. This cost may not lie within everyone's budget. Especially for teenagers who usually do not have a steady income, it may be financially challenging to pay a higher price for just one garment, even if it is a more sustainable alternative.

2.4.3 Greenwashing

Another issue which has less to do with the consumer, but rather the companies, is greenwashing. Greenwashing is the act of pretending to be more sustainable and ethical (green) than they actually are. Many brands claim to use recycled materials or ethical labour practices, but then fail to disclose the facts in their actual reports. Without transparency and accountability, these claims do little to reduce the actual environmental impact. This makes it harder for the consumer to find actual ethical and sustainable brands, costing more time and effort. This, in turn, misleading marketing, can cause teenagers to be sceptical about actual sustainable and ethical brands [56].

2.5 Psychological and Behavioural Change Strategies

Understanding the psychological and behavioural mechanisms that drive consumer habits is crucial in designing a product to reduce fast fashion consumption. Many individuals do not lack knowledge about the problem, but are still shopping unsustainably despite being aware of the environmental impact and ethical consequences. Due to the intention-action gap, just informing people will not be enough to address the issue. Therefore, when designing a product to encourage sustainable behaviour, psychological strategies can be used to bridge this gap.

2.5.1 Transtheoretical model

The Transtheoretical Model (TTM) is also known as the Stages of Change Model [57]. It explains how people move through different phases when trying to change their behaviour. The stages are: precontemplation, contemplation, preparation, action, and maintenance. In the precontemplation stage, people are not aware of the problem yet. In the contemplation stage, they are aware and might consider changing their behaviour. In the preparation stage, they will be preparing for action, planning and exploring. And in the action stage, they will start tackling the problem, and in the maintenance stage, they work to keep up their new behaviour over time. People can move through these stages non linearly and can relapse at any stage.

Understanding these stages helps tailor messages and interventions to meet people where they are. Someone in the action stage does not necessarily need informational content about the carbon footprint of fast fashion, but could rather benefit from encouragement and tools to keep going. On the other hand, someone in the precontemplation stage, who is not aware of the consequences of shopping fast fashion, might need this information. The TTM offers a framework to design experiences that are stage-sensitive, helping to reduce teens' fast fashion consumption by meeting them where they are.

2.5.2 Self-Determination Theory

Self-Determination Theory (SDT), developed by Edward Deci and Richard Ryan, is a framework in psychology that focuses on human motivation and the factors that support or hinder it [58] [59]. At its core, it distinguishes between intrinsic motivation, doing something driven by inwards influences, and extrinsic motivation, which is driven by external regard or pressure. The three basic psychological needs that support motivation and well-being are autonomy (feeling in control of one's actions), competence (feeling capable) and relatedness (feeling connected to others). When these needs are met, individuals are more likely to engage in persistent self-directed behaviours.

In designing to reduce fast fashion interest among teens, SDT suggests focusing on fulfilling the needs of autonomy, competence, and relatedness. This means allowing teens to feel in control of their choices, such as choosing how to participate in sustainable challenges or what sustainable values matter most to them. Features that give a sense of progress or mastery (like upcycling tutorials or visible growth in sustainability habits) can foster competence. To fulfil relatedness, peer collaboration or group-based challenges (e.g., with friends or schoolmates) can create a sense of social bonding around a shared goal. When teens feel ownership over their behaviour and see it as an extension of their values and social identity, their intrinsic motivation to consume less fast fashion can grow stronger and more sustainable.

2.5.3 Gamification

An effective technique is gamification [60], which, for that reason, has also been utilized by fast fashion brands to encourage clothing consumption. Gamification makes a mundane task more stimulating. This is done by taking elements from games such as points, challenges, rewards, or leaderboards and implementing them to encourage engagement and repeated behaviour. Fast fashion brands use it by offering loyalty points or daily app challenges. This strategy can, however, also be used to promote sustainable behaviour. It can make sustainability feel less like a chore, but rather a positive lifestyle, while tracking progress.

To counter the gamified strategies of fast fashion retailers, designers can develop game-like experiences that celebrate sustainable fashion choices. This might include digital platforms that award points for outfit-repeating, DIY repairs, or swapping clothes instead of buying new ones. Visual feedback (such as levelling up a "sustainable style" badge), social competition (like leaderboard rankings among classmates), or surprise incentives (random digital rewards) can increase engagement. By shifting the narrative to make sustainable fashion fun, competitive, and visible, gamification can increase the appeal of alternatives to fast fashion, particularly for teens used to reward-based digital environments.

2.5.4 Nudging

Nudging, a concept introduced by Richard Thaler and Cass Sunstein, is about subtly guiding people towards better decisions without restricting their freedom of choice [61]. It involves small design changes or prompts in the environment that influence behaviour in predictable ways. They do not rely on persuasion or financial incentives, but rather adjust the "choice architecture" to encourage certain behaviours. As they are usually simple and low-cost, they can therefore be very effective, especially for people who are already open to change but just need a little push in the right direction.

Nudging can be a powerful approach for subtly influencing teen decision-making around fashion without overtly restricting choices. For example, sustainable items can be presented more prominently on digital platforms, while unsustainable ones are visually deprioritized. Default settings can favour slower fashion filters (e.g. preselected 'second-hand only' toggles), or gentle messages like "Have you worn everything in your

closet?” could appear before purchase. These design tweaks don’t remove the choice to buy fast fashion, but gently steer teens toward reflection and better options, making mindful shopping feel effortless and normalized.

2.5.5 Habit formation

Habit formation is the process by which repeated actions and behaviours become automatic responses to specific cues or contexts [62]. It is rooted in behavioural psychology and research suggests that habits are formed through repetition, consistency and reinforcement, often outside conscious awareness. It is modelled through a “habit loop”, consisting of a cue, routine, and reward. When consistently done over time, this loop helps to establish long-term behavioural patterns.

Teens can be supported in developing small, repeated behaviours that gradually replace fast fashion buying with more mindful habits. For instance, a weekly reminder to re-style an old outfit before browsing online shops, or using mood boards that suggest re-wear ideas based on their wardrobe, can act as cues. If paired with consistent positive reinforcement (like tracking streaks or peer recognition), these cues can anchor sustainable routines. Over time, these patterns can become second nature, shifting the default shopping behaviour without requiring ongoing effort.

2.5.6 The go/no-go task

When tackling an addiction, the go/no-go task can be a powerful tool [63]. The Go/No-Go task is a cognitive exercise that helps individuals control impulsive behaviours by having them respond (Go) or not respond (No-Go) based on a specific trigger. The task strengthens self-regulation by training individuals to pause before reacting impulsively. In addiction recovery, it aids in improving response regulation, helping individuals resist triggers or urges linked to addictive behaviours. By practising, individuals can strengthen their cognitive control, making more deliberate choices. The task often includes immediate feedback, reinforcing correct decisions and encouraging self-regulation, which is crucial for breaking addictive patterns and improving long-term behaviour.

Teenagers often make spontaneous fashion purchases driven by emotional or social triggers. Designing digital tools that mimic Go/No-Go tasks, such as simple interactive games or alerts that train impulse control, could help them pause before buying. For instance, a browser extension or app could ask users to wait 10 seconds and reflect (“Do I really need this?”) before proceeding to checkout. Visual feedback and small rewards for resisting could reinforce behaviour. Over time, this can train cognitive inhibition, helping teens act more deliberately and resist impulsive fast fashion consumption.

2.5.7 Social Learning Theory

Social Learning Theory (SLT), developed by Albert Bandura, explains that people acquire new behaviours through observation of others, especially in social environments [64]. The learning process involves four components: attention (noticing the behaviour), retention (remembering it), reproduction (being able to perform it), and motivation (wanting to do it). Behaviour is more likely to be imitated when the model is perceived as similar, competent, or admired, and when the behaviour is seen to result in positive outcomes. This theory underscores the importance of social context, suggesting that much of human behaviour is learned vicariously through others rather than through direct experience.

Teenagers are especially influenced by peers and aspirational figures. Platforms that highlight relatable role models (such as influencers, classmates, or youth activists) who creatively engage with slow fashion can encourage imitation. By making these behaviours visible and socially rewarding, through short videos, testimonials, or shared challenges, teens are more likely to adopt them. It’s important that the models seem

authentic, culturally relevant, and share similar values or lifestyles with the target audience to increase the likelihood of behaviour replication.

2.5.8 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB), developed by Icek Ajzen, posits that behavioural intention is the most important predictor of actual behaviour [65]. This intention is shaped by three primary factors: attitude toward the behaviour (whether the person evaluates it as positive or negative), subjective norms (the perceived social pressure to perform or not perform the behaviour), and perceived behavioural control (the belief in one's capability to carry out the behaviour). When individuals hold a favourable attitude, perceive social approval, and believe the behaviour is within their control, they are more likely to follow through with action.

To reduce the intention to buy fast fashion, designs should aim to shift attitudes (e.g., showing the harms of overconsumption), reinforce supportive norms (e.g., through peer approval and visible group action), and boost teens' confidence in their ability to act (e.g., clear instructions on where to shop sustainably, how to repair, or how to swap clothes). Interactive features like anonymous pledges, social polls, or simple "how-to" flows can help teens feel both supported and capable, improving the likelihood that they will act on their intention.

2.5.9 Identity-Based Motivation Theory

Identity-Based Motivation (IBM) theory, developed by Daphna Oyserman, proposes that people are more likely to engage in behaviours that are congruent with their self-concept [66]. Identity is dynamic and context-sensitive, meaning that cues in the environment can activate different aspects of one's identity. When a behaviour is perceived as aligned with "who I am" or "who I want to be," it becomes more compelling. In contrast, behaviours that feel disconnected from identity are less likely to be pursued, even if they are objectively beneficial. The theory also suggests that identity-congruent behaviours feel more achievable and worthwhile, and that people are more persistent in the face of challenges when acting in line with their identity.

Designers can reduce fast fashion interest by aligning sustainability with teenage identity aspirations. For example, if sustainability is linked with values like creativity, independence, uniqueness, or activism, teens may view slow fashion not as restrictive, but as a form of personal expression. Visual language, branding, and community-building should reinforce these identity links, making it desirable to be the kind of person who upcycles or shops second-hand. Campaigns that ask "What does your style say about your values?" can activate identity in a motivational way.

2.5.10 Diffusion of Innovations

The Diffusion of Innovations theory, developed by Everett M. Rogers, explains how new ideas, behaviours, or products spread within a population over time [67]. The diffusion process unfolds through five adopter categories: innovators, early adopters, early majority, late majority, and laggards. Key mechanisms in this process include communication channels, time, and social systems. Innovations tend to diffuse more quickly when they are perceived as better than existing alternatives (relative advantage), easy to understand and implement (complexity), compatible with existing values (compatibility), testable on a small scale (trialability), and observable in use (observability). Social influence and peer-to-peer communication are crucial in this progression.

In promoting slow fashion behaviours, it is important to identify and empower teenage "innovators" and "early adopters" to become visible, vocal advocates. This can be supported by giving them tools to share their efforts, build communities, and gain recognition. Over time, seeing their success can motivate others

in the social circle to follow. Making sustainable fashion behaviour easy to try (trialability), publicly visible (observability), and culturally resonant (compatibility) can accelerate adoption. Peer-to-peer sharing and social contagion are crucial for scale.

2.6 Designing a Product to Reduce Fast Fashion Consumption

Fast fashion consumption is ingrained in modern culture, driven by media influence, convenience, and affordability. As a result, there are already many products on the market that aim to reduce fast fashion consumption. These range from educational apps and wardrobe visualization tools to second-hand marketplaces. By analysing how they function and how effective they are, we can identify what works, what doesn't, and what gaps remain to be filled. This insight is valuable in informing the design process of this project.

2.6.1 Existing apps and websites

There are a lot of apps catered to more sustainable behaviour, each in their own way. Generally there are five categories of apps to be found.

1. **Resell:** Apps like Depop, Vinted, ThreadUp and Nuw offer second hand shopping and rental options. These online platforms offer a more circular approach to fashion, making sustainability more accessible and trendy.
2. **Sustainability Rating:** Good On You and Renoon inform users on the sustainability of a brand through means of rating brands. The rating is based on the brands' transparency, ethics, the actions they take to lessen their impact on the environment and how they treat their workers.
3. **Wardrobe Management:** Whering, Save Your Wardrobe, 30WearsChallenge help people track and use clothes they own more. It promotes long term behaviour change by encouraging mindfulness and planning.
4. **Repair & Alteration:** Sojo, Fix That Shirt, Mend It App are apps that connect users with local repair services or provide help, tips, and DIY tutorials to fix damaged garments. This extends the life of a clothing item, reducing textile waste.
5. **Sharing, Swapping and Renting:** By Rotation, Tulerie, Nuw support peer-to-peer lending and swapping. Fat Llama offers the same services, but not limited to clothes.

All these apps use different strategies to support and influence people's shopping habits. Certain patterns emerge, such as the use of gamification in the "30 Wears Challenge" or social features like likes, reviews, and community-building in apps such as Depop or Vinted. They are also easily accessible, often free, and widely available.

However, some gaps can be identified. Most of the existing tools focus on users who are already aware of the issue and are willing to take action. These are people who are in the preparation or action stage of behaviour change. In contrast, people in the pre-contemplation stage are often reached through general awareness campaigns, as climate-related messaging is everywhere nowadays. But those in the contemplation stage, who are aware of the problem but unsure how to act, are often overlooked by these tools. In addition, all of these interventions are digital. This creates a potential opportunity for physical products or in-person experiences. Even with the existing gamification elements, there is more potential to frame sustainability as something enjoyable

and engaging. Furthermore, there are very few tools that directly interrupt the impulse buying process. For example, prompts placed in stores or online could encourage users to reflect, delay gratification, and reduce impulsive purchases.

2.6.2 Behavioural change interventions

Besides traditional apps and websites, several other forms of interventions exist to nudge or prompt people to change their behaviour. Examples of campaigns that aim to influence behaviour can be found below:

1. Who made my clothes

One well-known example within the fashion industry is the Who Made My Clothes? campaign by Fashion Revolution [68]. This global movement encourages consumers to question the origins of their clothing and promotes transparency within the fashion supply chain. By asking fashion brands to disclose who made their garments, the campaign makes the invisible visible, highlighting the human labour behind the clothes we wear. This shift in focus appeals to consumers' moral values and sense of justice, tapping into identity and responsibility. Rather than only raising awareness, it prompts a direct action: ask, engage, and think before you buy. This shows how even subtle prompts and nudges at key decision-making moments can delay impulsive purchases and foster a more reflective consumer culture.

2. Anti-Smoking Campaigns

Anti-smoking campaigns provide another powerful model for behaviour change. Through the use of graphic imagery [69], personal testimonials, and fear-based messaging, these campaigns aim to trigger an emotional response that makes the long-term risks of smoking feel immediate and unavoidable. For example, commercials that show the internal damage caused by smoking or portray real-life stories of people suffering from smoking-related illnesses have been successful in creating aversion and instilling guilt. These interventions don't just raise awareness, they leverage strong emotions to counteract the appeal of the habit, making it harder for individuals to ignore the consequences of their behaviour.

3. Don't drink campaigns

An initiative to raise awareness and promoting mindful drinkings is the public health campaign Dry January. It originated from the United Kingdom and launched by the charity Alcohol Change UK [70] in 2013 and has gained popularity around the world. The idea behind Dry January is to help individuals resetting their relationship with alcohol after the typically indulgent holiday season. For many, it's also an opportunity to reflect on their drinking habits and build healthier patterns moving forward. Dry January is not necessarily aimed at people with serious alcohol problems (as they might need professional help) but rather the general population. Although it's called Dry January, many people choose to adapt it flexibly. Some might aim for "damp January" by simply reducing drinking, rather than cutting it out completely. By focusing on a single month, Dry January creates a clear time limited goal that feels achievable, making it easier for people to commit without feeling overwhelmed.

4. Don't drink and Drive campaigns

When it comes to promoting safer decision-making, drink-driving campaigns have taken a more social and identity-driven approach. In the Netherlands, the BOB campaign [71] (short for Bewust Onbeschonken Bestuurder, or "Consciously Sober Driver") encourages designated drivers to take pride in staying sober. Rather than using fear, the campaign emphasizes social responsibility and positive identity: being the "BOB" is something to be proud of. Through repetition, branding, and supportive messaging, the campaign successfully normalized the concept of a designated driver in Dutch culture, making it easier for individuals to act responsibly in social settings.

5. Don't be distracted while in traffic

Another Dutch example is the MONO campaign, which addresses distracted driving due to phone use [72]. MONO encourages people to drive without distraction, mono meaning “one” or “single,” as in “one focus.” The campaign uses a calm, visually appealing aesthetic and messages that highlight the importance of focus, presence, and safety. Instead of guilt-tripping, it appeals to a desire for mindfulness and clarity. MONO has gained traction, especially among younger audiences, through relatable visuals and integration into school programs and social media.

6. Documentaries

Documentaries such as *The True Cost* [73] and *Buy Now!* [74] focus on the environmental and social consequences of fast fashion, highlighting the human and ecological toll of the fashion industry. By presenting real-world stories of factory workers, environmental degradation, and unsustainable production practices, these films appeal to viewers' emotions and provide them with knowledge they may not have had before. The goal is to inform viewers, often leaving them with a sense of moral obligation to make more sustainable choices. Documentaries work by changing perceptions and framing the issue in a way that feels personal and urgent, driving viewers to take action, whether by making more conscious shopping decisions or participating in movements like Fashion Revolution.

7. Awareness campaigns on Social media

Social media influencers and environmental advocates often run campaigns to spread awareness about the negative impacts of fast fashion. These campaigns might involve posting before-and-after shots of repurposed or upcycled clothing, sharing personal stories about sustainable living, or educating followers about brands that prioritize ethical production. Platforms like Instagram and YouTube allow for the viral spread of such messages, particularly when influencers with large followings lead the charge. Social media campaigns work by engaging people in an informal, peer-to-peer way, often relying on influencers to set trends and shift consumer behaviour through relatability and aspirational content.

8. Commercials

Commercials, whether on TV or online, are one of the most traditional forms of mass communication for behaviour change [75]. Fast fashion brands have often used commercials to encourage purchasing, while anti-consumerism campaigns, like those targeting waste or overconsumption, often leverage commercials to raise awareness. For instance, ads that show the environmental impact of mass production or promote secondhand shopping can create a sense of urgency and responsibility among viewers. These campaigns aim to shift consumer behaviour on a broad scale by capitalizing on mass media's reach.

All these campaigns, regardless of the medium, aim to influence people's behaviour by either altering their perceptions or changing the emotional and social context in which decisions are made. Whether it's through raising awareness, creating friction in decision-making, or using social influence, each approach provides a unique angle to help shape consumer habits and encourage more responsible behaviour.

Chapter 3

Methods and Techniques

For this project will be based on the creative technology design process by Mader and Eggink [76]. The Creative Technology design process is visually depicted in figure 3.1.

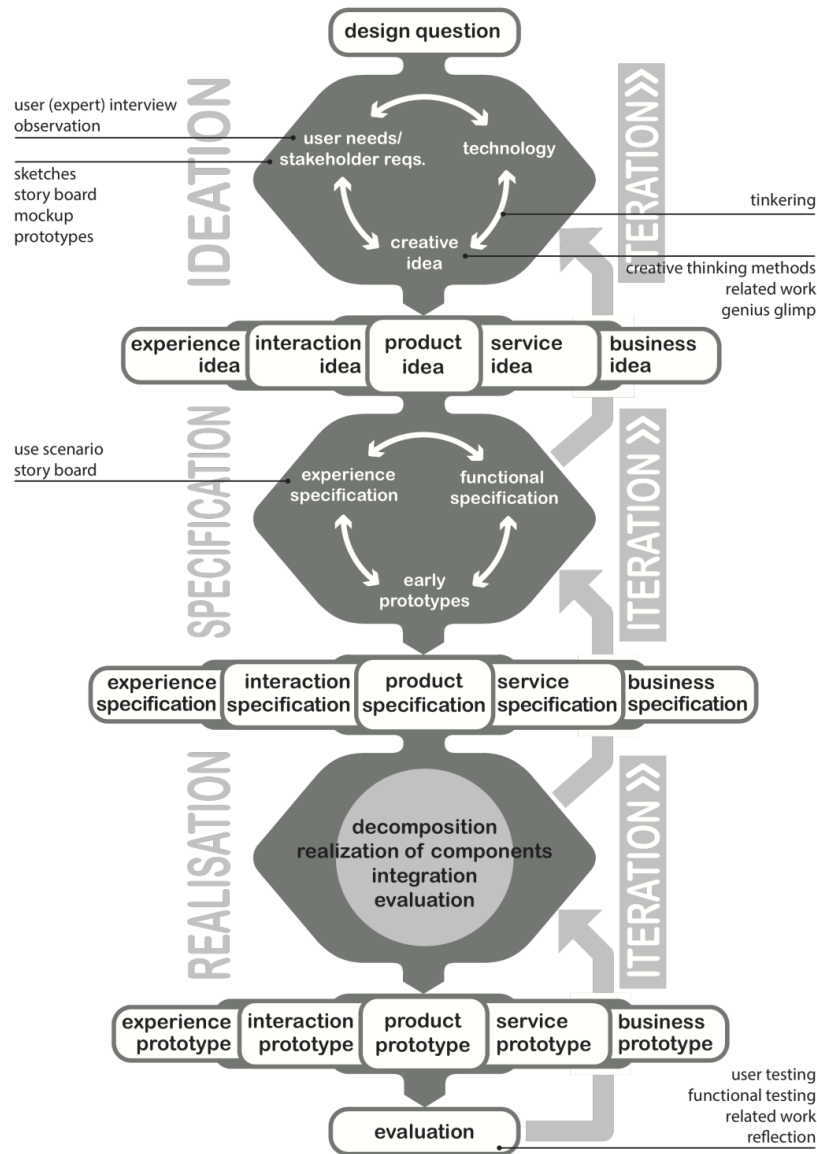


Figure 3.1: A Creative Technology Design Process

3.1 The Creative Technology Design Method

The design process of Creative Technology has four phases: Ideation, Specification, Realisation, and Evaluation. Every phase is characterized by set result in the beginning and end of a phase. The design method is based on repeated diversion and conversion in every phase. Each phase starts with a wide exploration and in the end narrows down to specific choices. The creative technology is also influenced by spiral models which are base on real world design which are non-linear and involve nested problems. Solving a design issue often leads to new questions that might first require gathering knowledge. That research can then raise further design problems to solve first. This back-and-forth between design and knowledge questions can be found in the Ideation and Specification phase. Here, potential solutions often loop through several iterations before reaching a clear direction.

3.1.1 Ideation

The first phase is the Ideation Phase, where one starts by identifying new ways to apply existing or new technology. In this phase, there is a focus on experimenting with techniques (tinkering). The goal of this phase is to get a clear overview of the project and user requirements. The user needs will be acquired through, research, brainstorming and a stakeholder analysis by combining a stakeholder matrix with stakeholder profiling.

3.1.2 Specification

The second phase is Specification, where one will refine ideas and create multiple prototypes of possible solutions. Prototypes do not need to be perfect, but need to give functional and give insights into what works and what does not work. In addition, these prototypes also go through a loop of revisions to gain an understanding of the user experience. Through constant iteration, one can usually narrow it down to one solution. System requirements will be prioritized using the MoSCoW method (Must, Should, Could, Won't have), based on input from users and stakeholders. The user scenarios will outline typical interactions to inform design, and the storyboards will visually represent the user journey and interface flow.

3.1.3 Realisation

The third phase is the Realisation phase. Here the building of the product or solution happens. It is clear what the final solution will be and it will be build. In this phase testing and iterations can still happen, however it should generally be very clear what one is working towards. The goal is to integrate components and assemble the final product.

3.1.4 Evaluation

The fourth phase, the Evaluation phase. Typically, one evaluates their solution by testing it on functionality and user experience. This can be done in multiple ways. User testing, comparing it to existing technologies, or reflection. Here one reflects whether the goals of whether the design meets the original goals from the Ideation Phase. It is important to understand the user experience of the product and to what extent the product/solution has satisfied the requirements.

Chapter 4

Ideation

In this chapter, the first phase of the Creative Technology Design Method, Ideation, will be outlined.

4.1 List of Requirements

Target Group Needs

The requirements for accessibility, affordability, and appeal stem from the needs of teenagers. As a group, they often have limited budgets and are drawn to engaging and trendy content.

- It should be accessible.
- It should be affordable.
- It should appeal to the target group.

Design Goals and Content

The emphasis on clarity, simplicity, and non-preachy messaging comes from the necessity to keep teenagers engaged and not excluded. Informative and relatable content delivered in a visual, digestible way is crucial to maintain credibility and attention.

- It should offer informative content.
- It should convey information in a simple, visual, and relatable way.
- It should not be preachy or overwhelming.
- It should avoid using moralizing.
- It should help users understand the impact of their shopping habits.
- It should encourage the user to change their habits.
- It could offer alternatives or find alternatives that suit the user's style and budget.

Behaviour Change and Psychological Principles

Behaviour change theory supports the requirement to meet users where they are in their journey and guide them forward.

- It should match the behavioural stage the user is in.
- It could help to recognize impulsive shopping habits.
- It could help manage the user's budget.
- It could help distinguish real, sustainable brands from greenwashing.
- It could help track the user's progress.

Engagement and Motivation

Requirements like interactivity, challenges, and social sharing come from the understanding that teenagers are highly motivated by peer dynamics and reward systems. Gamified elements make sustainable behaviour fun and motivating, while social validation encourages continued engagement.

- It should be interactive and visually appealing.
- It could have a link or call to action.
- It could offer challenges, rewards, or badges.
- It could make the user feel part of a community.
- It could offer social support and validation.
- It could offer a way to compete or collaborate with friends.
- It could be social and shareable.

Format and Structure

Including a non-digital component acknowledges that not all impactful experiences happen on screens. This requirement comes from understanding that blending digital and real-life actions can make behaviour change more tangible and lasting.

- It could have a non-digital part.

4.2 Stakeholder analysis

This stakeholder analysis is done by combining a stakeholder matrix with stakeholder profiling. This is in order to understand the roles, motivations and impact of the stakeholders. By examining each group's level of influence and interest. The analysis helps guide design decisions that are both user centred and aligned with the ecosystem of sustainable fashion. The stakeholder matrix can be found in figure 4.1.

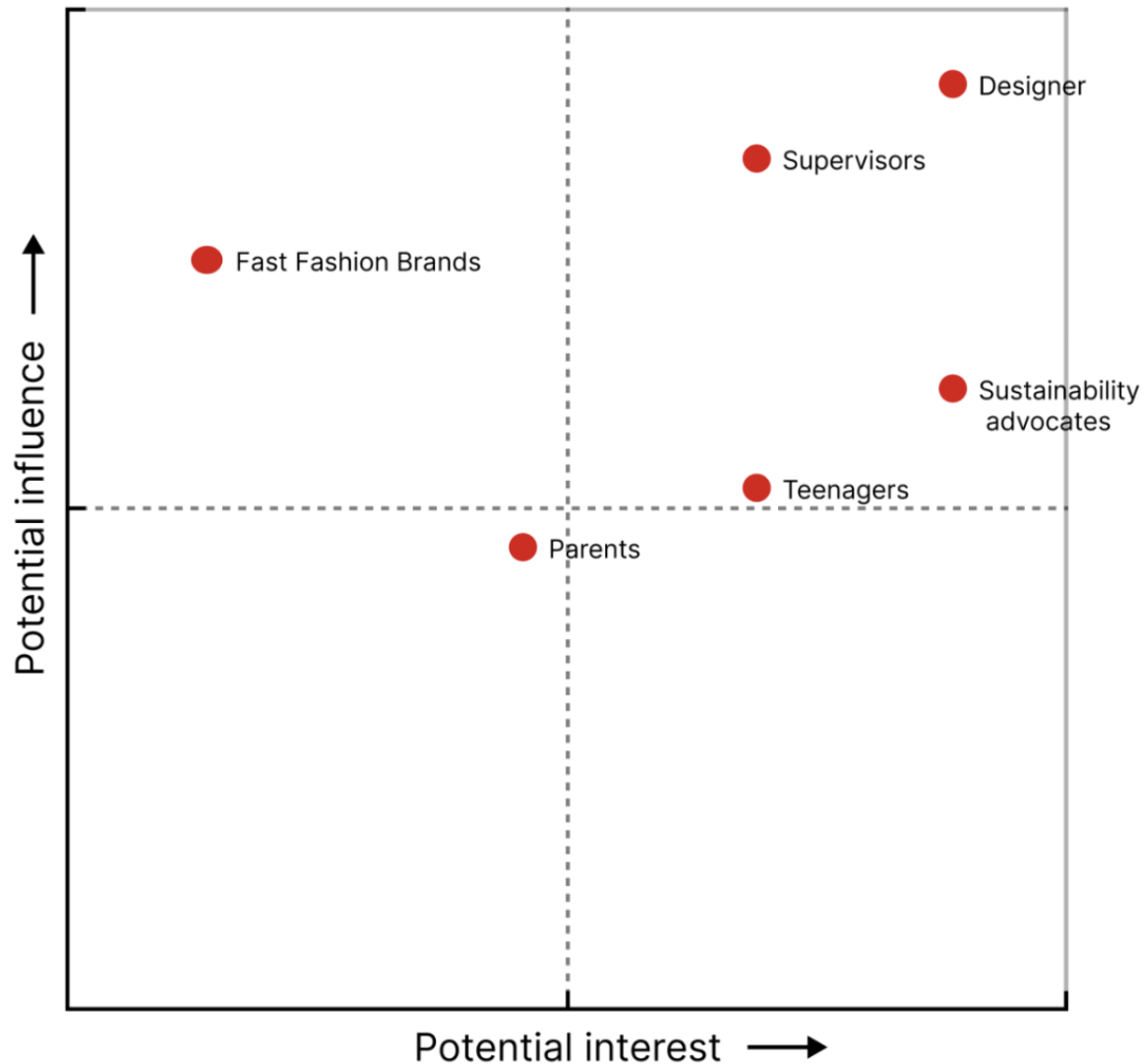


Figure 4.1: Stakeholder Analysis

1. Teenagers

The teenagers are the primary target users. Their main interests are expressing their identity through fashion, staying trendy, and maintaining social acceptance. They are motivated by affordability, accessibility, and convenience. Teenagers have a significant influence on the design, as their behaviours are shaped by peer pressure, social media trends, and the need to keep up with fast fashion cycles. To engage them, the solution should be relatable, digital-friendly, and low-friction, making it easy for them to adopt sustainable fashion habits while still aligning with their desire for instant gratification and social validation.

2. Parents

Parents, while not the primary consumers, play a key secondary role as influencers and gatekeepers,

particularly for younger teens. They are interested in financial control and instilling responsible behaviours in their children. Their influence is medium in strength, as they may support or resist behaviour change efforts based on their values and perceptions. Engaging parents could involve creating awareness tools or family-oriented solutions that align with their educational goals and concerns about sustainability.

3. **Fast fashion brands**

The fast fashion brands are major stakeholders with high influence over consumer behaviour. Their interests are centred around maximizing profits, maintaining a high sales volume, and adapting to market trends, including consumer demand for more ethical products. These brands have the power to shape public consumption patterns, both through their marketing strategies and their product offerings. The intervention design must consider the possibility of collaboration or opposition from these brands.

4. **Sustainability advocates**

Sustainability advocates represent a medium to high level of influence in shaping public discourse on ethical consumption. Their primary interest is to promote environmental protection and raise awareness of the fashion industry's negative impacts. They play a crucial role in amplifying messages, providing content, and legitimizing sustainable behaviour. Designers can use these advocates to help spread awareness and support the intervention through partnerships and collaborative efforts, ensuring that the solution is backed by trusted voices in the sustainability space.

5. **Designer**

The designer holds a central role in the development and execution of the intervention. Their main interests revolve around creating a solution that is impactful, user-centred, and effectively addresses both the environmental and social challenges posed by fast fashion. Their influence is high, as they control the design direction, balancing user needs with ethical goals. The intervention must be functionally feasible and align with sustainability principles to drive long-term behaviour change.

6. **Supervisors**

Finally, the supervisors or academic advisors overseeing the project are key stakeholders, with a medium to high level of influence in guiding the project's direction. Their interests lie in ensuring the academic integrity, ethical responsibility, and research contributions of the design. Supervisors provide critical feedback, structure, and resources throughout the design process, helping ensure the project stays on track and meets its objectives.

4.3 **Brainstorm**

There was a general session with the people from the GP group, where we discussed the user requirements and the Transtheoretical Model (As can be seen in figure 4.2). This helped to decide what part every member would focus on. Then, in a second and third session, constructing two lotus blossom charts with the problems "How can we close the intention-action gap?" and "How can we decrease the intention to buy fast fashion?" led to the generation of around 120 ideas (As can be seen in figure 4.3). The lotus blossom technique is a very effective way to generate many ideas and make finding solutions easier by making it more bite-sized. The fully filled-in charts can be found in [Appendix B](#). By merging some ideas, watching the TED talks, which spoke about bridging the action-intention gap, keeping the Transtheoretical Model and other behaviour change models and strategies in mind, four more concrete concepts were generated. Those will be explained in the next section.

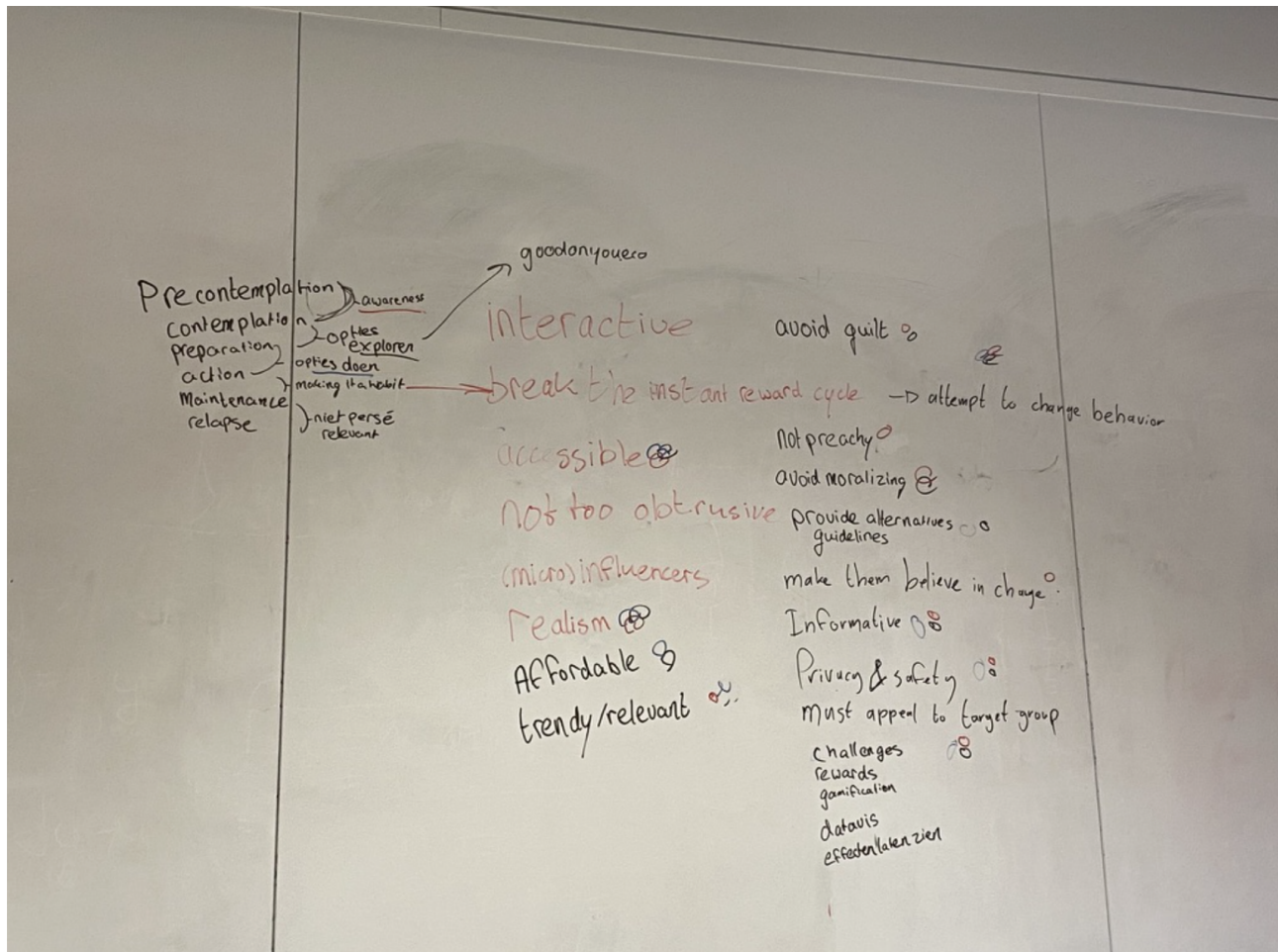


Figure 4.2: Session 1

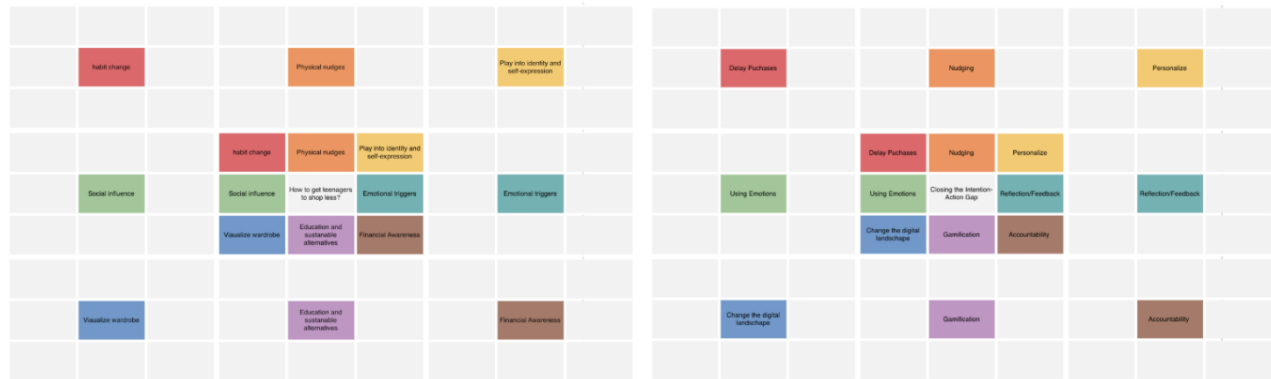
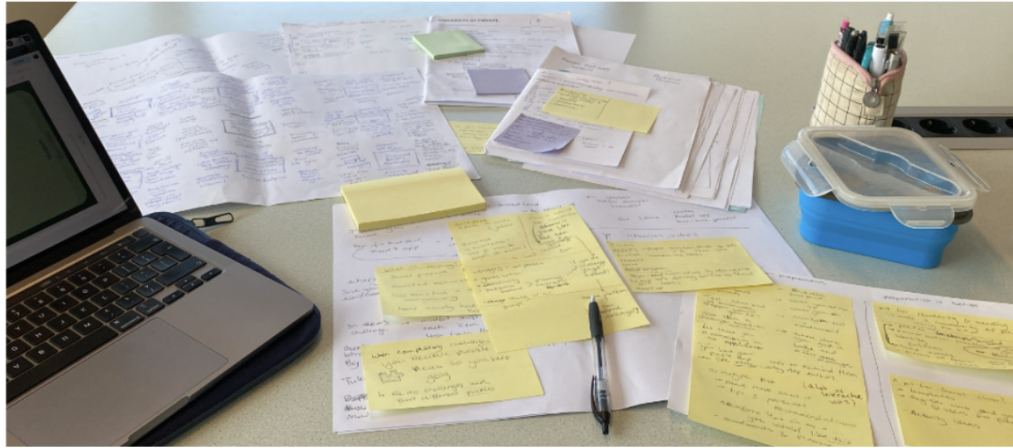


Figure 4.3: Session 2

4.4 Concepts

4.4.1 Concept 1: Collaborative Moodboard Platform

A social platform where users can create outfits without the need to buy new clothes. Users upload items from their own closets, create collaborative moodboards with friends, and have access to each other's virtual wardrobes. This platform shifts the impulse to shop into a creative, expressive activity, promoting conscious styling and social connection over consumption.

This concept is grounded in Self-Determination Theory, by supporting autonomy (styling their own clothes), relatedness (social collaboration), and competence (mastering outfit creation). It also draws on Social Learning Theory, as teens learn from observing how their peers mix and match existing items. Habit Formation is addressed by replacing shopping with a new routine, creating and sharing outfits. Elements of Identity-Based Motivation are also present, as the platform allows users to express their fashion identity without consumption.

4.4.2 Concept 2: Identity-Based Sustainability Platform

This is an online platform driven by identity, featuring personal quizzes and advice based on the results. The platform would offer tailored advice on how to embrace sustainability, as different people thrive in different ways. Some may prefer challenges, others DIY tips, some may look for recommendations on sustainable

brands, and some may need guidance on thrifting. The platform would tap into the concepts of identity and self-expression in a sustainable manner, creating a social environment where sustainability becomes "cool". The most prominent foundation is Identity-Based Motivation Theory, ensuring behaviour aligns with how users see themselves. It also incorporates Self-Determination Theory by allowing personalised pathways that support intrinsic motivation. Through tailoring and social proof, it draws on the Theory of Planned Behaviour, especially in strengthening attitudes and perceived control. Diffusion of Innovations is also relevant, as early adopters can influence broader trends by sharing their identity-driven sustainability paths.

Find your Wardrobe Footprint

How often do you buy new clothes?

Do the test →

You are a Creative Curator!

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Figure 4.4: Concept 2

4.4.3 Concept 3: Anti-Fast Fashion Web Extension

This is a Chrome web extension designed to block pop-ups from fast fashion ads. It would also reduce engagement with fast fashion websites by modifying their design, removing stimulating colours and text to make the site feel more boring. Through UX design, the extension could include features like waitlisting items before they can be purchased or offering prompts and challenges before buying, all aimed at discouraging unnecessary clothing consumption. This concept makes strong use of Nudging, subtly changing the choice environment to discourage impulse buying. It integrates the Go/No-Go Task approach to train users in resisting impulsive behaviours. Habit Formation is supported by interrupting automatic browsing routines and replacing them with reflective pauses. The design also reflects aspects of the Theory of Planned Behaviour, increasing users' perceived control over their purchasing actions. Depending on how it's introduced, it can be adapted to different stages in the Transtheoretical Model (e.g., prompts for contemplators vs. blockers for actors).

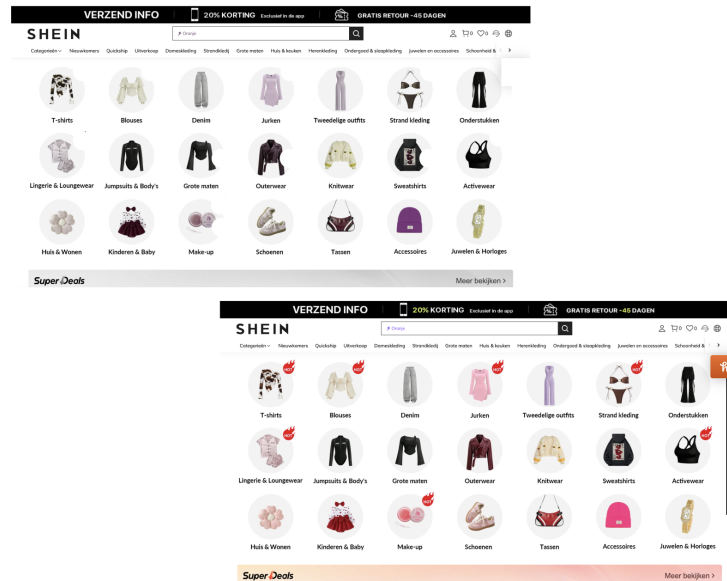


Figure 4.5: Concept 3

4.4.4 Concept 4: Sustainability Card Game

A playing card deck designed around sustainable fashion. This deck would be a “normal” 52-card playing set, but with a focus on sustainability themes. The cards would feature prompts and questions to encourage conversation about sustainable fashion, especially since playing card games are often a communal activity, making it easier to discuss in a relaxed, social setting. The game would also include challenges that are linked to an online platform where users can reflect on their progress and share their experiences. This concept draws from Social Learning Theory, as conversations during gameplay can model new sustainable behaviours. It is grounded in Self-Determination Theory through the intrinsic enjoyment of play (autonomy and relatedness) and through achieving challenges (competence). Gamification makes learning fun and motivating, while Habit Formation is encouraged by repeated exposure to sustainability themes. It also aligns with the Transtheoretical Model, helping teens reflect on their current stage of behaviour and potentially move forward.

4.5 Final concept

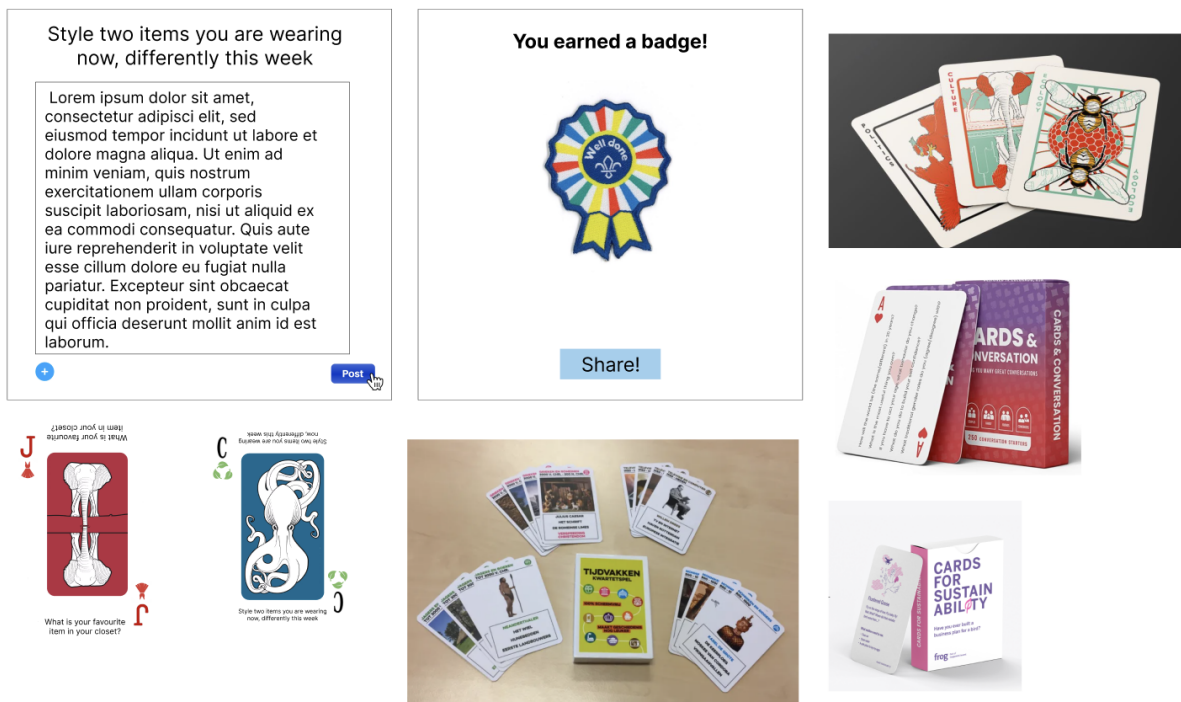


Figure 4.6: Moodboard with images from left to right, up to down: [1] [2] [3] [4] [5] [6] [7]

The final concept is the fourth idea: the card game. This concept is based on the transition from contemplation to preparation. The intention-action gap occurs between preparation and action. People in this phase might say, "I know what to do, but I'm not doing it," or "I would want to, but I don't know how." Another example is, "I know how to do it, but I won't because...". The reason the fourth option was chosen is that it offers a low-barrier, engaging and social way to spark meaningful conversation about sustainable fashion. It is playful and in a familiar format that makes it accessible, especially for young people. And it encourages reflection and discussion in a relaxed setting, as games are usually played with friends or family. Furthermore, a physical game can subtly nudge behaviour through repeated casual use, without needing active commitment. Moreover, measuring whether the intention-action gap is being bridged is not feasible to evaluate within the scope of a bachelor's graduation project. It is difficult to measure whether the action is actually carried out. Additionally, there are already plenty of apps and websites that help people take action, so creating another one seemed unnecessary.

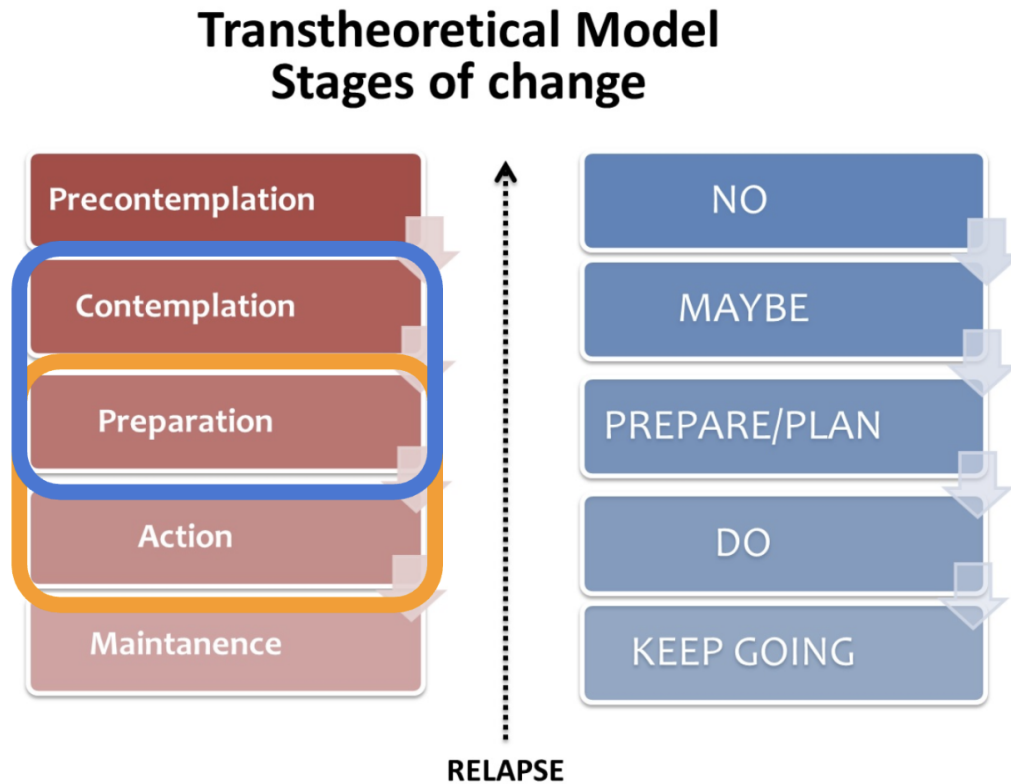


Figure 4.7: Transtheoretical Model from [8]

This card deck is a hybrid tool designed to promote awareness, reflection and discussion around ethical fashion choices in a low barrier, engaging and social format. The idea is to take the familiar and accessible format of a 52-card deck and infuse them with the sustainable fashion theme. This will make it both functional for gameplay and meaningful as an educational and behavioural prompt. Conversational prompts may include questions such as “What does ‘sustainable’ fashion mean to you?”, Mini challenges include “Style one second hand piece this week”, and facts may include insights about the environmental and social consequences of the fast fashion industry.

The cards are designed to be played as Kwartet (a Dutch version of Go Fish) where players collect sets based on card numbers instead of suits. Each quartet has a larger theme, and each suit within that set explores a different angle of that theme. As kwartet is a social and verbal game where players read themes and ask questions out loud, it naturally sparks conversations about fashion.

The social nature of card games is integral to the concept. People often play cards in informal settings (gatherings, hangouts, leisure time) making it an ideal context to introduce sustainable fashion topics in a non-intrusive way. This communal aspect encourages dialogue and peer learning, which are powerful motivators for behaviour change, especially among teens and young adults.

To extend the impact beyond the table, the deck is linked to an online platform. On this platform users can log and reflect on completed challenges, encouraging personal engagement. They can share experiences and add photos, adding a sense of community and reinforcing a sustainable identity through social validation.

When completing a challenge, the user receives a badge they can share on social media. The platform can also suggest additional action, provide educational content or even connect users to local sustainable fashion alternatives, further guiding behaviour from intention to action.

This card deck does not attempt to “solve” overconsumption through rigid behavioural rules or guilt based tactics. Instead, it nudges users toward critical thinking, collective reflection and conversations in a playful, familiar and accessible format. It is not just a game, it is a conversation starter, teaching tool and bridge between awareness and action.

The card deck would function similarly to the free promotional materials given out at business events or by organizations, but since it is a physical deck of cards, it has fewer barriers. There’s no need to buy, subscribe, or make any commitments. It’s simply a deck of cards to play games with, subtly nudging people to start conversations. This approach provides reflection and prepares individuals for action. While this idea is not necessarily tailored specifically to teenagers, it could be adapted to suit that demographic. Additionally, it encourages sharing achievements on existing platforms, which would hopefully engage the teen generation.

Chapter 5

Specification

5.1 Goal

The goal of the project is to create a card game that encourages teenagers to reflect on their relationship with fashion, especially in the context of sustainability. It should spark conversation among teenagers about sustainable fashion in an engaging, playful and non-judgemental way. Through reflection questions, small challenges and social mechanisms players are invited to think more critically about their habits, the environment and personal values. The game uses familiar elements from other games for an accessible and intuitive gameplay, even for players who are new to the topic of sustainable fashion.

5.2 Description of the System

The core of the system is an interactive educational card game designed to spark critical thinking about sustainable fashion among young people. The deck contains 70 unique cards divided into thematic categories. Depending on the category, they present a question, dilemma, or task related to clothing choices and their environmental or social impact.

Originally, the idea was to have 52 cards, this is now extended to 70 cards with the addition of challenge and action cards. This transforms it into a kwartet-style game with engaging challenges that naturally encourage more dialogue than a standard 52-card deck with printed questions would.

What sets this system apart is its integration with a digital layer: every card features a QR code on the back, which players can scan to access deeper context online. This structure encourages players to physically engage in discussion and reflection during gameplay, while also offering optional access to broader perspectives, information, and resources through the linked website. The balance between tangible interaction and digital exploration allows the system to support both playful learning and informed decision-making.

5.3 Description of Components

5.3.1 The Cards

In the card game there are three categories:

1. **Clothing Cards**

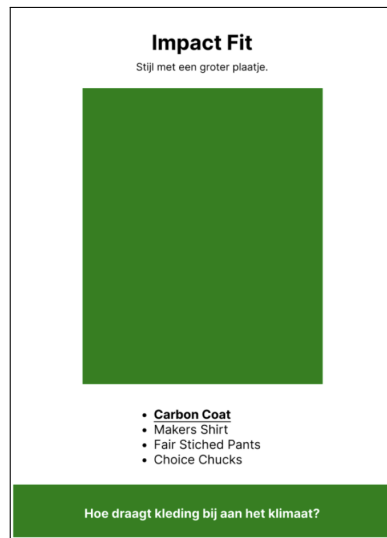


Figure 5.1: Example of a Clothing card

Each outfit contains 4 clothing cards (e.g. Carbon Coat, Makers Shirt) and each garment has a short tagline and reflection question. These will be in Dutch as the game will be tested with Dutch teenagers. Players are encouraged to collect full outfits (like the traditional kwartet game) which earns them points. These cards are centred around topics like fast fashion, second hand shopping, environmental impact and emotional buying habits. The goal is to collect full outfit sets to earn points.

Each outfit set is based on a theme connected to sustainability, identity, ethics, or emotional factors influencing teen fashion consumption. The names are playful and tied to the card game's goal of sparking reflection and promoting behavioural change. The full list of all texts on the cards can be found in [Appendix C](#).

Fit Name	Description
Impact Fit	This category focuses on the effects of fast fashion such as pollution, waste, and poor working conditions. The name reminds players that every outfit has an impact on people and the planet.
Think Twice Fit	This fit is about taking a moment to reflect before buying. Many young people know about sustainability, but still shop on impulse. “Think Twice” encourages more conscious, thoughtful choices.
Smart Shopper Fit	This outfit represents people who shop with care, thinking about quality, price, and sustainability. It’s called “Smart” because it’s clever to buy clothes that last and do less harm.
Influences Fit	This fit is inspired by social media trends and peer pressure. It reflects how apps like TikTok shape what we wear, often making us follow others instead of our own style.
Feelings Fit	Sometimes we shop because we feel bored, sad, or excited. This fit shows how fashion connects to emotions. Buying clothes can give us a quick mood boost, even if it’s not always needed.
Better Together Fit	This fit shows how fashion is social. Friends often shop together, give advice, or copy each other’s style. It’s about connection and how we influence one another.
Budget Fit	This outfit is about looking good on a budget. Dressing sustainable does not need to be super expensive. It can also include shopping second-hand or swapping items, which are cheaper and better for the planet.
Planet Proof Fit	This fit is all about the environment. It shows eco-friendly choices like natural fabrics or low-waste production. The name “Planet Proof” means it’s good for nature and future-proof.
Activism Fit	Fashion can be political. This fit stands for clothing that supports causes, like anti-fast fashion, climate justice, or fair trade. It’s about style with a message.
Ethical Brands Fit	This outfit shows brands that treat people and the planet fairly. Clothes can be used to support companies that are honest, green, and socially responsible.
Identity Fit	This fit is about expressing who you are. Fashion can reflect your mood, beliefs, or group. It helps you show your personality and find your place in the world.
Habit Fit	This category is about making sustainable choices part of your daily life. It’s not about one big change, but small habits, like re-wearing clothes or planning purchases, that stick over time.

Table 5.1: Descriptions of the different outfit types in the card game.

2. Challenge Cards



Figure 5.2: Example of a Challenge card

Cards with reflection-based tasks (e.g. “Name 5 fast fashion brands”) It uses a bidding mechanic: the highest bidder must complete the task. One can earn points for completing or initiating a challenge. All challenges are listed below.

- I can name at least ... sustainable fabrics in 30 seconds.
- I can name at least ... secondhand items from my closet in 30 seconds.
- I can name at least ... fast fashion brands in 30 seconds.
- I can name at least ... clothing items I’ve owned for more than 3 years in 30 seconds.
- I can name at least ... ways to reuse an old t-shirt in 30 seconds.
- I can name at least ... ways to repair a garment without using needle and thread in 30 seconds.
- I can name at least ... items in my closet that are white or black (or contain those colors) in 30 seconds.
- I can name at least ... items in my closet that are red or orange (or contain those colors) in 30 seconds.
- I can name at least ... items in my closet that are yellow or green (or contain those colors) in 30 seconds.
- I can name at least ... items in my closet that are blue or purple (or contain those colors) in 30 seconds.
- I can name at least ... sustainable clothing brands in 30 seconds.
- I can name at least ... places or stores where you can shop secondhand in 30 seconds.
- I can name at least ... ways to avoid impulse purchases in 30 seconds.
- I can name at least ... reasons why people buy clothes in 30 seconds.
- I can name at least ... ways to be more sustainable with clothes in 30 seconds.

3. Action Cards



Figure 5.3: Example of an Action card

These cards add strategy and chaos to the game (e.g. “Closet Shuffle” or “Style Spy”). Some allow you to interact with other players’ cards

- **Clothing Swap:** Swap one of your cards (blind pick) with a player of your choice.
- **Copycat:** Take one card at random from another player. If you answer a reflection question, you get to keep it. If not, you must discard it.
- **Closet Shuffle:** Everyone passes one card to the left.
- **Challenge Mirror:** Pick another player and make them do a Challenge card. If they refuse, they skip their next turn. If they succeed, they earn the card.
- **Style Spy:** Secretly look at two cards from one player’s hand.
- **Trend Block:** Pick a player: they are blocked from playing on their next turn.
- **Shop & Snatch:** This turn, you may ask two players for a card instead of one.

Back of the cards

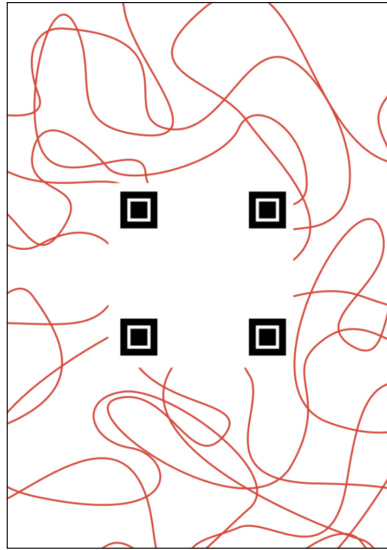


Figure 5.4: Back of the cards

Each card has a QR code linking to the website.

5.3.2 The Website

The website is structured into three key sections, each designed to enhance the user's understanding and engagement with the project's themes:

1. **Homepage:** The homepage serves as the main entry point to the website. Here, visitors can read a clear and concise overview of the project, its goals, and why it matters. This page also contains easy-to-find, clickable links that guide users directly to the Challenges section, encouraging them to dive deeper into the content.
2. **Challenges:** This section is dedicated to exploring larger, more complex issues related to sustainable fashion and clothing consumption. Visitors can browse through a variety of challenges that highlight environmental, social, and ethical aspects of the fashion industry. Each challenge includes reflections, stories, and personal insights shared by others who have encountered or are addressing these issues. This communal sharing fosters empathy and motivates users to think critically and creatively about solutions. All challenges from the website can be found in [Appendix B](#). One can also take on a challenge themselves and by doing it and writing a reflection. This in turn earns the user a reward that they can share on social media. An example of a reward badge can be found in figure 5.5, all rewards can be found in [Appendix I](#).



Figure 5.5: Reward

3. **Information Pages:** The information pages offer detailed background knowledge and practical resources related to the project's themes. These pages cover a wide range of topics, such as:

- **Durable fabrics:** Information about different types of sustainable and long-lasting textiles, their benefits, and how to identify them.
- **Sustainable brands:** Profiles of brands committed to ethical production, eco-friendly materials, and fair labour practices.
- **Hacks and tips:** Practical advice on how to extend the life of clothing, such as repair techniques, upcycling ideas, and care instructions.
- **Sustainability concepts:** Explanations of important ideas like circular fashion, carbon footprint, and slow fashion.
- **Resource links:** Access to external websites, articles, videos, and tools that support sustainable fashion choices.

Together, these pages provide a comprehensive resource that supports the card game and encourages informed, responsible decision-making about clothing.

5.3.3 Colour scheme

The colour scheme of the card set was designed with a strong emphasis on intuitive visual differentiation. Since the game relies on quick recognition and interaction, it was important that the different card types, and especially the twelve unique outfit cards, could be easily distinguished by colour alone, even at a glance.

Outfit Cards: 12 Distinct Colours

There are twelve outfit cards in the set, and each one has been assigned a visually distinct colour to make them easy to tell apart. The chosen colours are:

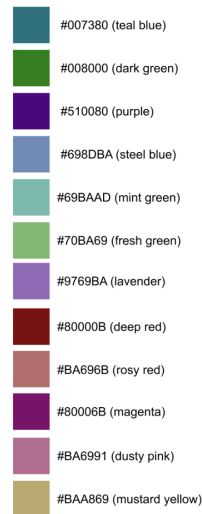


Figure 5.6: Colour scheme

These twelve colours were selected to be instantly recognizable from one another, focusing on variation in hue and overall visual impression. The idea was not to follow any symbolic or thematic colour logic, but simply to create a set that is clear and user-friendly, allowing players to quickly identify and sort the cards during gameplay. Since the game is intended for general use, the colour choices were made with the average user in mind, without specifically designing for colourblind accessibility or other visual impairments.

Challenge and Action Cards: Two Strongly Contrasting Colours

In addition to the outfit cards, there are two other card types in the game: challenge cards and action cards. To ensure these categories stand out clearly from the outfit cards and from each other, they were each assigned a strong, highly contrasting colour:

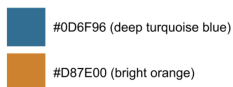


Figure 5.7: Colour scheme

These two colours were intentionally chosen to create clear visual separation. The deep blue of the challenge cards evokes a more serious or thoughtful tone, while the vivid orange of the action cards suggests energy and immediacy. Together, they form a contrast not only with the outfit colours, but also with each other, making it easy for players to recognize the type of card at a glance.

5.4 Rules of the Game

Rules

Goal of the Game

Collect outfits (quartets) by answering questions and performing actions. Each card represents a piece of clothing, and four matching cards together form a complete outfit. The player with the most complete outfits at the end of the game wins.

Before You Start

- 2–4 players: 6–7 complete outfits, 6 challenge cards
- 5–8 players: 8 complete outfits, 10 challenge cards
- 8+ players: 12 complete outfits, 15 challenge cards

Each player is dealt 6 cards. The remaining cards form a draw pile in the center, called “the closet.” The youngest player starts.

Taking Your Turn

On your turn, choose one of the following actions:

1. Ask Another Player for a Card

You may request a specific card from another player by name. For example:

“Do you have the Regret Jeans?”

- If the other player has the card:
 - They read the reflection question on the card out loud.
 - You answer the question, and then receive the card.
 - You may continue your turn.
- If they do not have the card:
 - Your turn ends, and you draw one card from the closet (middle pile).

2. Play a Challenge Card

Play a Challenge card by reading the prompt out loud and filling in a number. For example:

“I can name at least 3 sustainable fabrics in 30 seconds.”

- Any player may raise the bid by offering a higher number.
 - For example: “I can name at least 5...”
- The player with the highest bid attempts the challenge.

Scoring for Challenges

- If you played the Challenge card and complete it, you earn +2 points. You keep the turn.
- If another player completes your Challenge card, they earn +1 point. Your turn ends.
- If the challenge is not completed, the player who attempted it loses -1 point, and the turn ends.

Note:

The Challenge card stays with the player who attempted it, regardless of the outcome, and is not returned to the game. (Hint: use a scoresheet to keep track of the points!)

3. Play Action Cards

Orange Action cards can be played in addition to your main turn.

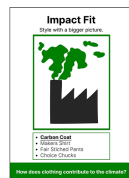
- You may play multiple Action cards in one turn.
- Playing an Action card does not end your turn.

End of the Game

The game ends when a player has no more cards in their hand and the middle pile (the closet) is empty. All other players get one final turn, then scoring begins.

Scoring

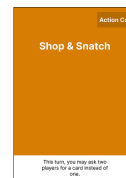
- Complete outfit (quartet): +2 points
- Completed Challenge from your own hand: +2 points
- Completed Challenge from another player's hand: +1 point
- Failed Challenge: -1 point



Clothing Cards



Challenge Cards



Action Cards

Figure 5.8: The Rules

5.5 Requirements

Must Have

Functional Requirements

- The game must contain a deck of 70 cards divided into Clothing, Challenge, and Action categories.
- Each card must include a QR code that links to relevant content on the website.
- The website must have a functioning homepage, challenge section, and information section.
- Players must be able to collect outfits in kwartet-style sets for points.
- Challenge cards must include a bidding mechanic.
- The game must be playable in a group setting and suitable for teenagers aged 12–18.

Non-Functional Requirements

- All card text must be in Dutch for testing with Dutch teenagers.
- The website must be mobile-friendly, as users may scan QR codes using their phones.
- The card material must be durable enough for repeated physical use in classrooms or workshops.

Should Have

Functional Requirements

- The game should include mechanics for earning and tracking points.
- Action cards should influence gameplay (e.g., card swapping, turn skipping).
- The website should allow users to share their own stories or reflections (optional submission).
- The system should support repeated rounds and flexible group sizes (e.g., 3–8 players).

Non-Functional Requirements

- The visual design of the cards and website should be engaging and teen-friendly.
- Website content should load quickly and be accessible on older mobile devices.

Could Have

Functional Requirements

- QR codes could lead to short videos or animations rather than only text-based content.

Non-Functional Requirements

- Cards could be made from eco-friendly or recycled materials to reflect sustainability goals.
- The website could include multilingual support beyond Dutch, such as English.

Won't Have

Functional Requirements

- The game won't require internet access for basic gameplay (QR codes are optional enhancements).
- It won't include AI-based personalization or complex digital gameplay mechanics.

Non-Functional Requirements

- No integration with external fashion platforms will be included in the first release.

5.6 User Scenarios

Emma (15)

Profile: Emma doesn't know much about sustainable fashion but is interested in style and social media trends.

Scenario: Emma joins a classroom play session of the card game with a few classmates. At first, she's focused on collecting as many outfits in the game. She pulls a card titled "Carbon Coat" and reads the tagline and reflection question. The question makes her pause. Out of curiosity, she scans the QR code and lands on a page explaining carbon emissions in clothing production. The homepage invites her to click through to the Challenges section, where she reads a real story about someone doing a "capsule wardrobe" challenge. After the session, Emma goes back to the site at home to explore "hacks and tips" on upcycling, deciding to try it out for her next school project.

Amir (16)

Profile: Amir enjoys discussions, games, and competitive elements. He often plays strategic games with friends.

Scenario: Amir is immediately drawn to the Challenge Cards. He pulls one that says "Name 5 fast fashion brands". Using the bidding mechanic, he wins and completes the challenge, earning points. He then uses an Action Card called "Style Spy" to peek at another player's hand. The game triggers a heated but fun conversation about fast fashion's ethics, where Amir plays devil's advocate. Curious, he later checks the Challenges section on the website via a card scan to read different perspectives. He's surprised by some emotional reflections and begins questioning his own consumer habits, even though he originally just wanted to win.

Zoë (14)

Profile: Quiet but thoughtful, Zoë tends to reflect on deeper issues and loves journaling.

Scenario: During the game, Zoë quietly builds her outfit and answers reflection questions seriously, though she doesn't share much aloud. A card asks, "Who made the clothes you wear most often?" which sticks with her. She scans the QR and browses to the Information Page about environmental impact. After the game ends, Zoë explores the Sustainable Brands page on the website and bookmarks a few names. The personal reflections in the Challenges section also resonate, prompting her to write a blog post for her school's magazine on ethical fashion.

5.7 Storyboard

1. Scene 1: Break Time – School or Hangout Spot

The friend pulls the card game out of their bag. The user is curious. “What’s that?” “It’s a game about clothes and sustainability. Wanna try?”. They sit at a table, open the box, and start setting up.

Back of the cards



Figure 5.9: Scene 1

2. Scene 2: Setup

They shuffle each pile and explain the basic rules to friends. Everyone is dealt a few cards. The game begins.

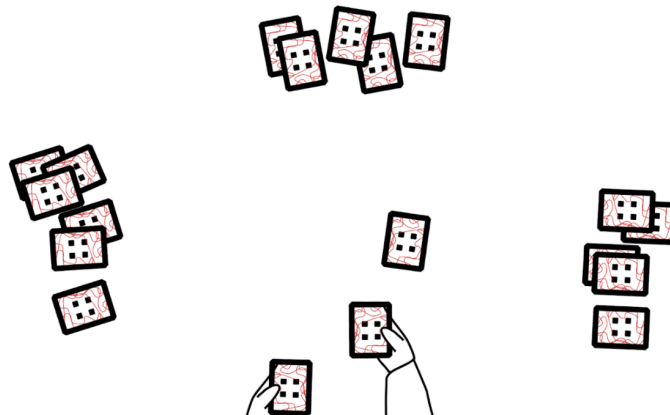


Figure 5.10: Scene 2

3. Scene 3: Asking for Cards

The friend asks for card, but the user doesn't have it. Next round the friend asks for card, the user has it. Before handing over the card, the user reads the question out loud. The friend answers it, and they receive the card that makes an outfit complete.



Figure 5.11: Scene 3

4. Scene 4: QR Code

While playing, the user sees the QR code on the back. The user is curious and scans it with their phone. The site opens to a short explanation about fast fashion and carbon emissions.

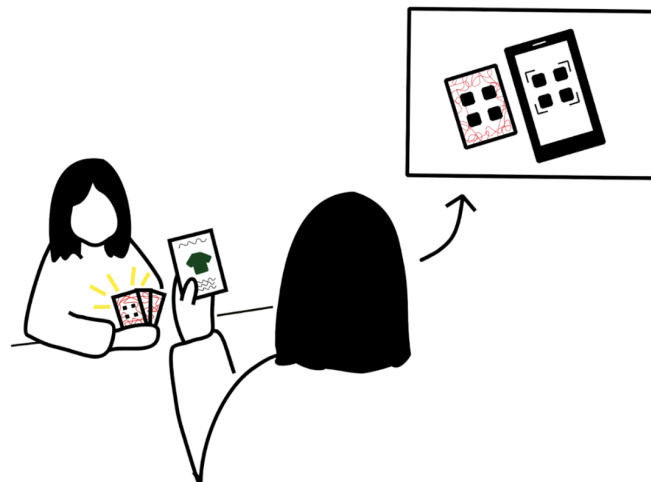


Figure 5.12: Scene 4

5. Scene 5a: Mid-Game – Interaction and Reflection

A friend plays a Challenge Card: “Name 3 fast fashion brands.” The group debates and jokes about it.



Figure 5.13: Scene 5a

6. Scene 5b: Mid-Game – Strategy

To annoy the player with the most points, the user plays an Action Card: “Closet Shuffle” and chaos ensues.

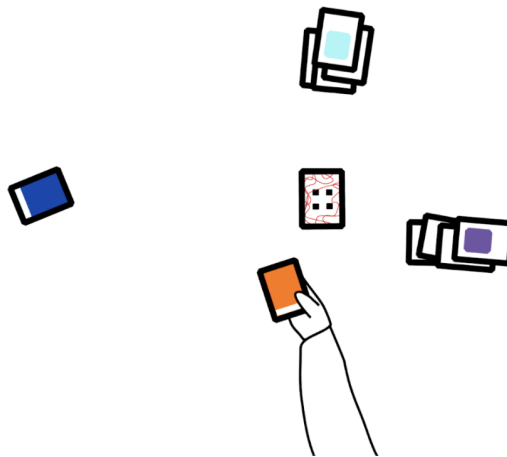


Figure 5.14: Scene 5b

7. Scene 6: Personal Discovery

The user starts noticing themes: how clothes are made, what they own, why they shop. They scan another card linking to a page about second-hand hacks. “I could actually try this,” they think.



Figure 5.15: Scene 6

8. Scene 7: Game Ending

The middle pile is empty. Everyone tallies up scores. The group laughs about how competitive it got. “Let’s do this again next week,” someone says.

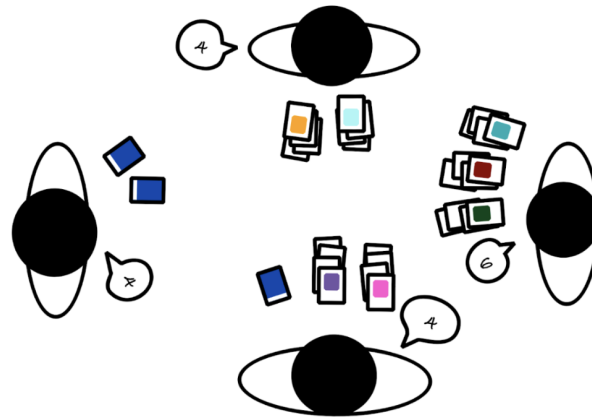


Figure 5.16: Scene 7

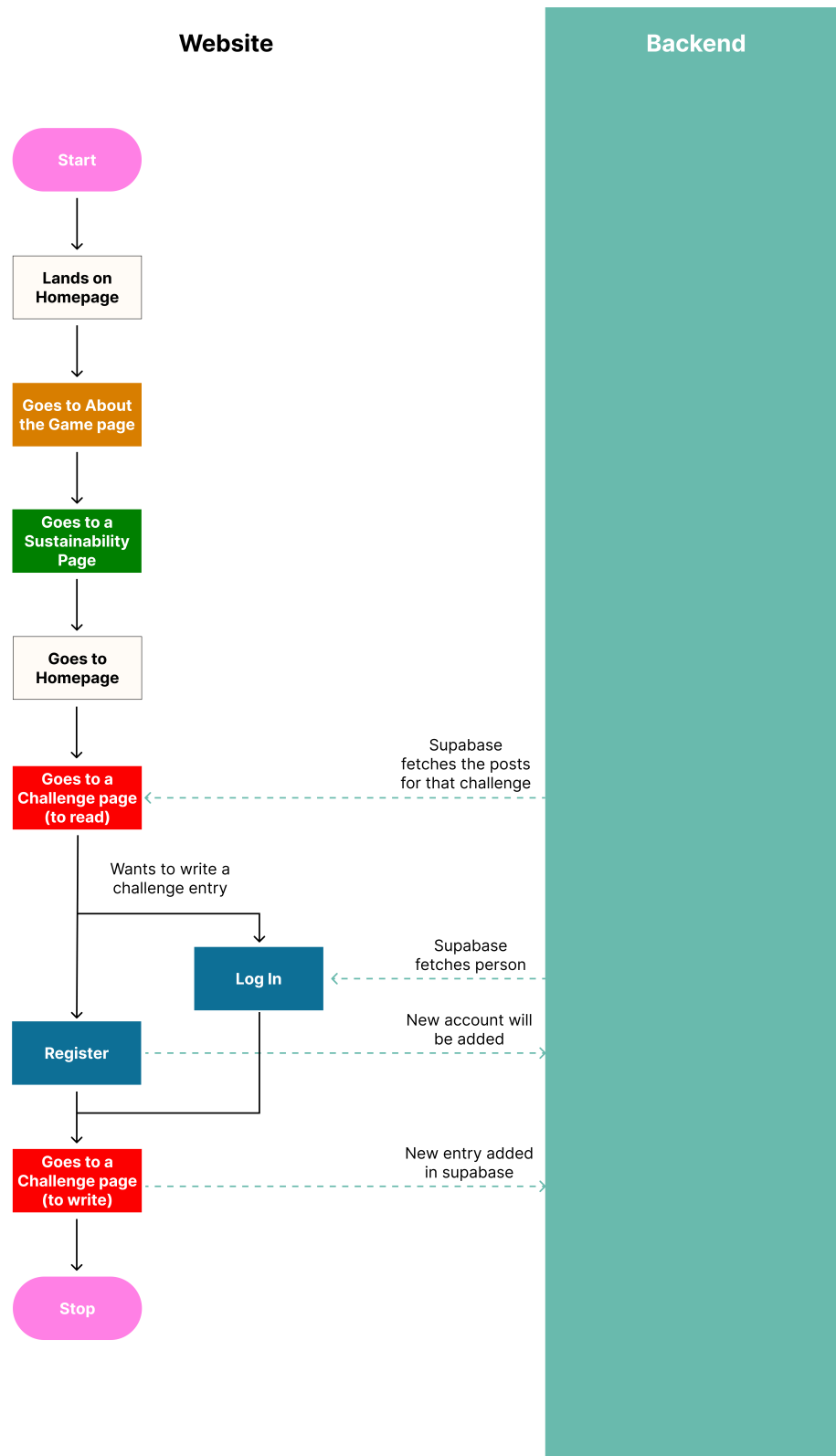
9. Scene 8: Aftermath

Later, the user checks the website again on their own. They explore the sustainable brands page, maybe bookmark one. Quietly, they start thinking differently about what they’ll buy next. They see challenges and others reflect on their experience, reading this makes the user want to try a challenge as well.

**Figure 5.17:** Scene 8

Website Flowchart

The following flowchart provides a clear and straightforward overview of the user's navigation through the website. It illustrates the main steps and decision points encountered during the typical user journey, highlighting how users move between pages and interact with key features. This simple flowchart helps to understand the website's structure and ensures that the user experience is logical and intuitive. The flowchart can be found in figure 5.18.

**Figure 5.18:** A simple user journey through the website

Chapter 6

Realization

6.1 Game Design

The card game, Rethread, was primarily designed using Figma and Krita. The name Rethread refers both to rewiring one's thinking and to the literal thread of garments, symbolizing reuse, repair, and sustainable fashion practices.

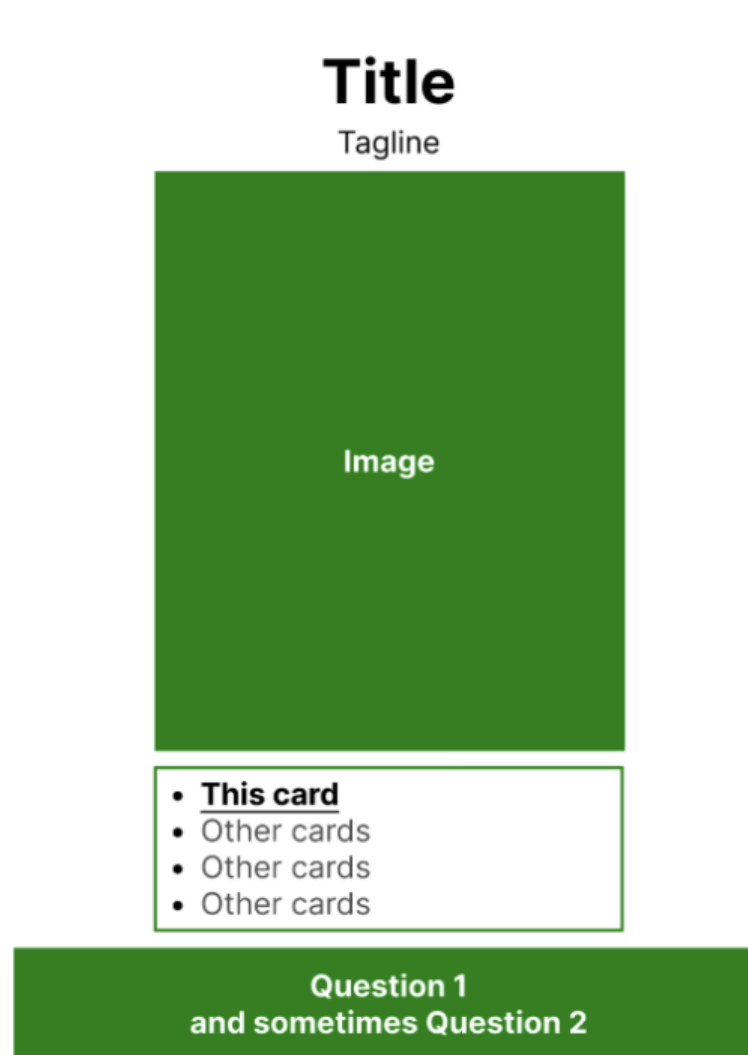


Figure 6.1: The Rules

The content of the cards (including questions, facts, and challenges) was developed and categorized based on themes that emerged from the background research. There are 13 outfit sets, each centred around a major topic related to sustainable fashion or common motivations behind fast fashion consumption. Each outfit is divided into four smaller subtopics, with one card per subtopic. Every card includes one or two reflection questions that align with both the card's subtheme and the broader theme of its outfit set. These categories and their corresponding questions are available in [Appendix B](#). The questions are in Dutch for testing with Dutch participants, though an English version also exists. Challenge Cards contain mini-tasks and use a bidding mechanic to encourage engagement. All challenges can also be found in [Appendix B](#). Finally, Action Cards were designed to add playfulness and unpredictability to the game dynamic (also detailed in [Appendix B](#)). Each card type was colour-coded to improve clarity and gameplay flow. Final card designs are included in [Appendix C](#).

6.2 Prototyping

To assess the functionality, clarity, and overall experience of the card game, an initial prototype deck was produced using a standard university printer. This allowed for a quick and cost-effective way to visualize and test the design before committing to more professional production. The prototype was tested in collaboration with the project supervisors, who provided valuable feedback on various aspects of the game, including the tone of the content, visual clarity, engagement levels, and pacing during gameplay. The playtesting process revealed several areas for refinement. Some of the questions were either too abstract or too straightforward, leading to limited discussion or disengagement among players. These were revised to be more open-ended and relatable, particularly with the teenage target group in mind. Similarly, the game mechanics were slightly adjusted to improve the pacing and ensure that the game remained accessible but still meaningful. These modifications were kept minimal to preserve the core concept, while improving the flow and educational impact of the gameplay experience. This early prototyping stage also proved essential in identifying practical design considerations, such as card size, print readability, and the effectiveness of colour-coding for different card types. These insights informed the final version of the deck, which was further refined for both visual appeal and functional clarity.

6.3 QR Code Integration

An important component of the game's hybrid design was the integration of QR codes on each card, serving as a bridge between the physical and digital aspects of the project. Every card includes a unique, scannable QR code that links to the homepage of the website, where more challenges and information can be found. This design decision was made to enhance the interactivity and depth of the game without overwhelming players with excessive text on the cards themselves. The QR codes were generated using an online QR code generator [77] and then embedded into the card layouts during the design process. Care was taken to ensure they remained both functional and visually integrated into the overall aesthetic of the card design. To maintain consistency and reinforce the game's central theme, the reverse side of each card features a subtle red thread motif. This visual element connects to the concept of "rethreading", symbolizing both the mental 'rewiring' associated with behaviour change and the literal thread of garments, highlighting the sustainable fashion context of the project. The QR codes also serve a practical function by allowing users to quickly access the broader website via their mobile devices. This supports the project's goal of providing a low-barrier entry point into more complex information and reflection, especially considering the teenage audience and the digital habits of that age group.

6.4 Website Design

The website was developed primarily in Dutch to suit the target testing group, which consists of Dutch-speaking participants. However, an English version is also available to ensure accessibility for a broader audience and for potential future international use. The site was built using a combination of HTML, CSS, JavaScript, and PHP, with Supabase functioning as the backend database. Supabase is used to store user account data and the card-related posts users can access through the game. Authentication is managed by an internal Supabase function. Additionally, only a single table named `post` was created. This table stores the post ID, the text content, the user who created the post, and the card to which the post belongs. These technical choices were made to ensure the site remains lightweight, fast, and responsive and to ensure the posts are stored.

id	created_at	Name	Post	Card	user_id
25	2025-06-16 08:08:43.498569+0	Lynn	Mijn shirt had een gat. Normaal zou ik he	1	NULL
26	2025-06-16 08:09:05.120888+0	Mees	Ik vroeg m'n oma om me te leren naaien.	1	NULL
27	2025-06-16 08:09:25.281851+0	Saar	Had een trui met losse mouwen. Op YouT	1	NULL
28	2025-06-16 08:09:58.023937+0	Noora	Ik wist niet dat bijna al m'n kleren van pla	2	NULL
29	2025-06-16 08:11:25.210997+00	Rayan	Ik keek in de labels en zag de woorden Po	2	NULL
30	2025-06-16 08:11:50.408711+00	Eva	Merken als Pull&Bear en Stradivarius klini	2	NULL
31	2025-06-16 08:25:20.571443+0	Timo	Minder kleren = minder stress. Ik wist eke	3	NULL
32	2025-06-16 08:25:33.963905+0	Mila	Dacht dat mensen zouden zeggen 'hè, dik	3	NULL
33	2025-06-16 08:25:46.399874+0	Samira	De eerste week was top. Tweede week di	3	NULL
34	2025-06-16 08:26:11.548091+00	Jayden	M'n neef gaf me een hoodie en ik gaf hem	4	NULL
35	2025-06-16 08:26:24.781533+0	Lieke	Ik kreeg een blouse van een vriendin. Ze	4	NULL

Figure 6.2: Post table in Supabase

Structurally, the website is divided into three main sections: the Homepage, the Challenges, and the Information Pages. The Homepage functions as a central hub, giving users a quick and clear overview of the platform. From here, users can navigate to the card game, read more about the project, or dive into the supporting materials on sustainable fashion. The design aims to be inviting and accessible, with clear call-to-action buttons and a layout that supports intuitive browsing.

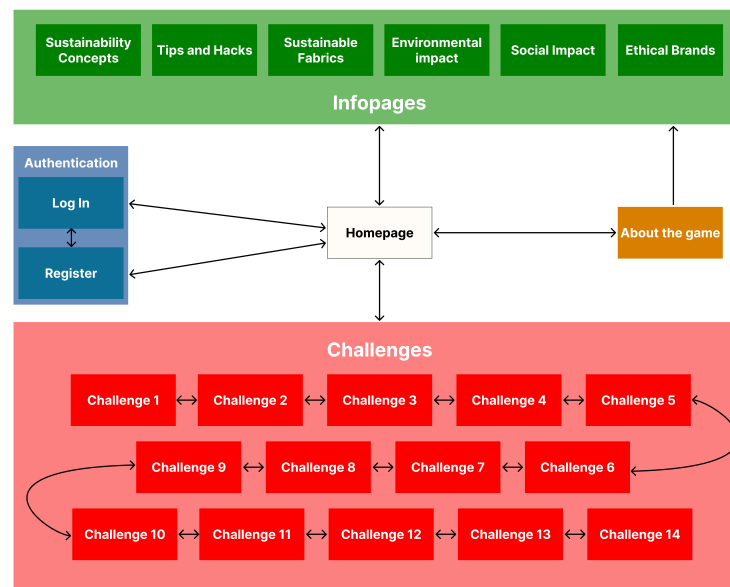


Figure 6.3: Navigation front end pages of the website

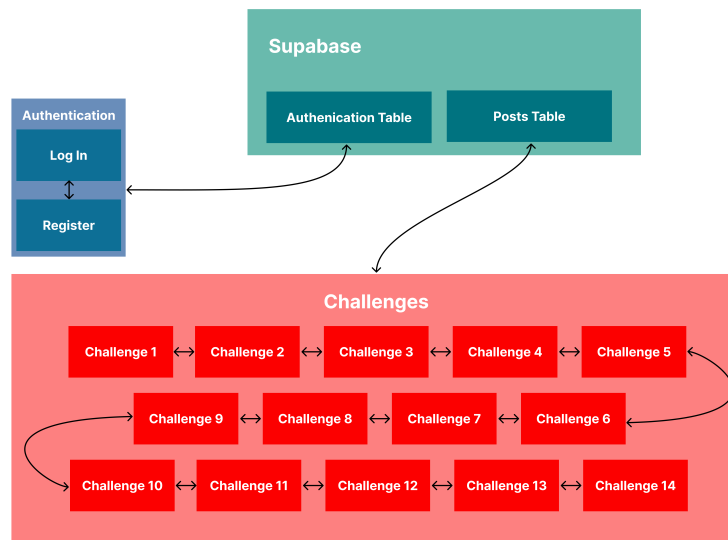


Figure 6.4: Overview backend workings

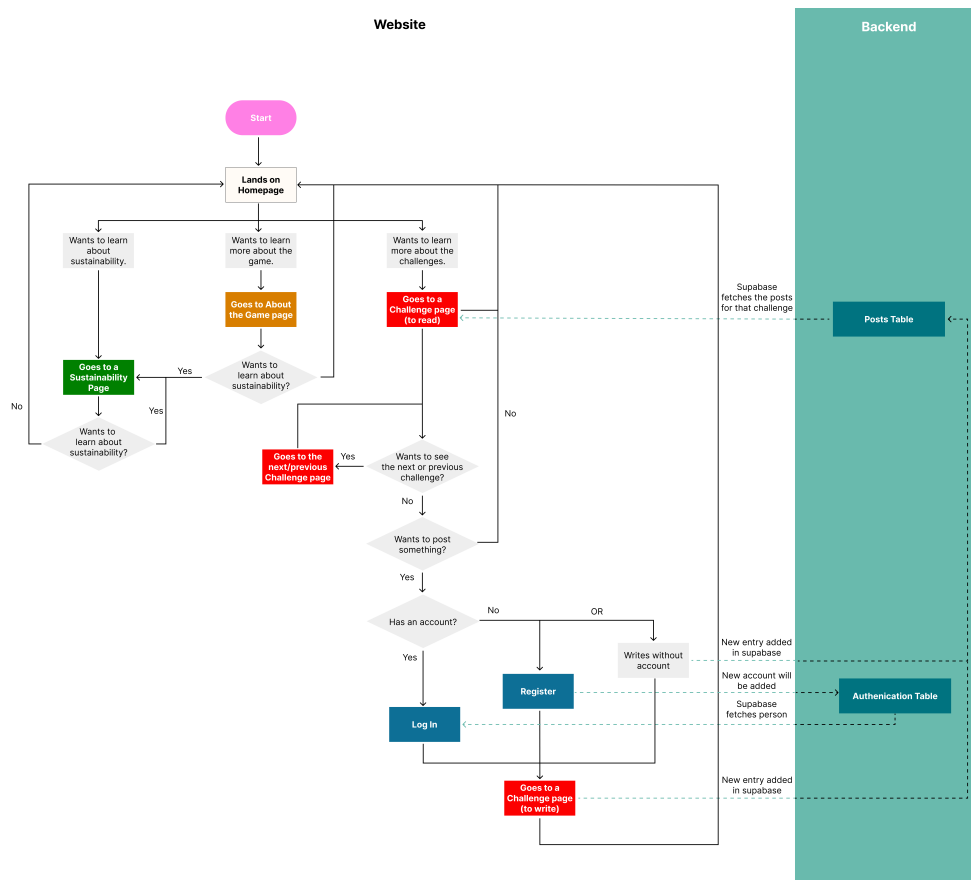


Figure 6.5: Final flow chart

The Challenges section (can be found in [Appendix C](#)) delves deeper into the underlying issues connected to fast fashion and sustainability. Here, users can read personal stories, some real, (some fictional during user testing), that are intended to spark empathy and personal reflection. These challenges are more in-depth than the mini-tasks found in the physical card game. They are designed to encourage users to take meaningful steps or consider their own behaviour in a broader social context. The idea is to build on the initial curiosity sparked by the card game and lead players toward more involved forms of learning and engagement.

The Information Pages provide concise but reliable background knowledge on various aspects of sustainable fashion. Topics include the environmental impact of different fabrics, guides to identifying more ethical brands, practical clothing care tips, and explanations of concepts like circular design and slow fashion. All content was sourced from reputable, evidence-based resources and then rewritten to suit a teenage audience. The goal was to strike a balance between being educational and accessible, avoiding overly academic or technical language. Navigation and layout were designed with mobile users in mind, as the majority of players are expected to access the site by scanning the QR codes on the back of the cards. To facilitate this, the website was optimized for small screens, with clear touch targets, a simple navigation bar, and quick loading times. Each card's QR code directs the player to the homepage of the site, ensuring that the transition from offline to online interaction is seamless. In this way, the card game acts as a low-barrier access point, designed to gently encourage further exploration without overwhelming new users.

6.5 Challenges During Realization

Throughout the realization phase, several refinements were made to improve the usability and coherence of both the physical and digital components. One of the most significant tasks involved rewriting the reflection questions on the cards. Initial drafts sometimes lacked the right tone, either too formal or too simplistic. Revisions focused on ensuring the questions remained clear and age-appropriate, while still prompting meaningful thought and dialogue among teenage players. Another challenge was implementing a stable QR code system. Early tests revealed that not all generators provided long-term reliability. Eventually, a solution was found that allowed for persistent links to be embedded on the cards, ensuring users can access the content without interruptions even long after the initial launch. Game balancing also required attention. During playtesting with three players, it became evident that 13 outfit sets created too long and complex a game experience. The number of sets was therefore reconsidered, and adjustments were made to streamline gameplay while still preserving variety and depth. On the digital side, refining the website's layout was a recurring task. Since mobile usability was crucial, small adjustments were made continuously to ensure that the interface remained clean, fast, and easy to navigate. From spacing and font sizes to button placements, every detail was reviewed to enhance the experience, particularly on smartphones. A broader challenge throughout was striking the right balance in terms of online content. The goal was to provide enough depth and value to encourage learning, but not so much information that users would feel overwhelmed or disinterested. Another important aspect was maintaining visual and thematic consistency between the printed materials (cards) and the digital interface. This included using similar colour schemes, icons, and language to create a cohesive and recognizable identity across platforms.

Chapter 7

Evaluation

To evaluate the impact and usability of the card game and online platform on teenagers awareness and attitudes toward sustainable fashion, a mixed-method approach was used. The goal of the evaluation was to assess (1) whether the intervention could influence participants' knowledge, attitude, and behavioural intention regarding sustainable clothing, and (2) how the usability and experience of the game and platform were perceived.

7.1 Participants and Recruitment

Participants were recruited from a secondary school in the Netherlands where the researcher had previously studied. This existing connection with the school made it easier to gain access to students and schedule multiple evaluation sessions within a short time frame. The school's willingness to collaborate also ensured a supportive and familiar learning environment, which aligned with the project's low-barrier, informal, and conversational approach. Two HAVO 4 classes (roughly equivalent to 10th grade students, aged 15–16) were selected in collaboration with one of the school's Aardrijkskunde (AK, or Geography) teachers. The choice of subject was intentional, the card game and platform fit naturally within the broader themes of sustainability, consumption, and environmental awareness often covered in geography lessons. In total, 14 students participated in the evaluation across four sessions, which were scheduled during regular class time. Prior to participation, informed consent procedures were followed carefully. For students under the age of 16, both a signed parental consent form and a separate student assent form were required. These documents explained the purpose of the project, what the session would involve, and how data would be collected and used. Students were also given the option to agree or decline consent for audio recording, with no consequences for their participation either way. The clear communication of ethical safeguards helped ensure a respectful and voluntary research process. By working with a small but focused group of students in a familiar school setting, the evaluation was able to maintain a high level of engagement and gather in-depth responses during and after gameplay. While the sample size was limited, the contextually rich data provided valuable insights into how adolescents relate to the topic of sustainable fashion, and how a playful, social intervention can spark meaningful reflection and discussion in a school environment.

7.2 Evaluation Procedure

The evaluation consisted of a structured 45-minute session including a pre-questionnaire, gameplay, platform exploration, and a post-questionnaire. This evaluation with application number 251457 was approved by Computer & Information Sciences (CIS) Ethics Committee of the University of Twente on 03-Jun-2025. Each session followed the same standardized format:

- **Welcome and Introduction (5 min):**
The researcher greeted the class, briefly explained the study goals, and answered initial questions.
- **Consent Process (5 min):**
Parent-signed consent forms were collected. Students were also asked to fill out their own consent forms, including optional consent for audio recording.
- **Audio Recording (1 min):**
If consented, audio recording was initiated before gameplay.
- **Project Explanation (3 min):**
A short explanation of the game, the online platform, and the purpose of the session was given.
- **Pre-Questionnaire (5 min):**
The researcher greeted the class, briefly explained the study goals, and answered initial questions.
- **Card Game Session (15 min):**
Students were divided into small groups and instructed to play the card game. The researcher observed the sessions and took qualitative notes, minimizing intervention. Participants were encouraged to explore any QR code elements on their own.
- **End of Audio Recording (if used) (1 min):**
Audio recording was stopped at the end of the game.
- **Post-Questionnaire (5 min):**
Participants filled out a second questionnaire, including repeated attitude/intention items, system usability questions (SUS), and open-ended reflection prompts.
- **Wrap-Up (3 min):**
The session concluded with a thank-you and final opportunity for questions.

7.3 Instruments

To assess both the cognitive and attitudinal effects of the game, a pre- and post-questionnaire structure was used. The questions were chosen to evaluate changes in awareness, intention, and user experience, with a combination of closed Likert-scale items and open-ended responses for richer insight.

7.3.1 Pre-Questionnaire: Demographics and Baseline Understanding

The pre-questionnaire included two sections:

- **Demographics:** Participants were asked about their age, gender, and previous experience with educational games. These questions helped provide context and allowed comparisons between different groups if needed.
- **Baseline Awareness and Attitudes:** Participants were presented with statements about their knowledge of fast fashion, its environmental impact, and sustainable behavior. These were rated on a 5-point Likert scale (from “strongly disagree” to “strongly agree”). For example, statements like *“I know what fast fashion means”* and *“I understand the impact of clothing on the environment”* measured existing knowledge. Other statements, such as *“I prefer cheap clothing, even if it doesn’t last as long”*, targeted current values and behaviors related to consumption.

7.3.2 Post-Questionnaire: Change, Reflection, and Usability

The post-questionnaire repeated the same awareness and attitude questions to detect any shifts after playing the game. It also included new sections:

- **Reflection and Self-Perceived Change:** Additional statements asked participants to reflect on what they learned and whether their thinking had changed. For instance: *“I have learned something new about fashion and sustainability”* or *“I discovered something I want to change.”*
- **System Usability Scale (SUS):** The SUS is a validated set of 10 items that assesses how easy and intuitive a digital experience is. Including this helped measure how user-friendly and engaging the game was.
- **Open Questions:** These invited participants to share their personal impressions, what stood out, what surprised them, whether their views had changed, and what could be improved. This allowed space for individual feedback and qualitative insights that the Likert-scale items couldn’t capture.

7.3.3 Why a Likert Scale?

Most statements used a 5-point Likert scale, as this is widely used in behavioral and social research for the following reasons:

- It allows participants to express varying degrees of agreement or disagreement, rather than forcing a yes/no answer.
- It is simple and intuitive, reducing the risk of confusion.
- It supports statistical comparison between pre- and post-questionnaire responses.
- It is compatible with non-parametric analysis methods, such as the Wilcoxon Signed Rank Test.

By combining closed, scaled questions with open-ended ones, the design captured both measurable change and rich, personal reflections, offering a fuller picture of the game’s effectiveness.

7.4 Data Analysis Approach

The data collected throughout the intervention was analysed using a mixed-methods approach, combining descriptive statistics with contextual qualitative insights. Quantitative data from both the pre- and post-questionnaires were analysed using the Wilcoxon signed-rank test. This is a non-parametric method appropriate for comparing two related samples. The test was selected due to the ordinal structure of the data, derived from Likert scale responses, and the potential deviation from the normality assumption required for parametric tests. The Wilcoxon signed-rank test evaluates whether there is a statistically significant difference in the median ranks of paired observations, making it suitable for assessing changes between pre- and post-intervention measures. The test works by ranking the absolute differences between paired values and analysing the signed ranks to determine if the distribution of differences deviates significantly from zero. The core assumptions for a Wilcoxon signed-rank test are [78]:

- **Related Measurements:** The test compares two sets of measurements that come from the same people, like before and after something happens. These measurements are connected or paired.
- **Pairs Are Independent:** Each pair of measurements comes from a different person and doesn't affect the others. Each pair is separate and unique.
- **Data Type:** The measurements should be continuous (like exact numbers) or at least ordinal (which means you can put them in order, like ratings). If the data is not continuous but ordinal or discrete, sometimes a small adjustment is used to make the test work better.
- **Ranking Possible:** At the very least, the data should be something you can rank or order (like “low,” “medium,” “high”). This lets the test compare which measurements are bigger or smaller for each pair.

Null hypothesis (H_0): The mean difference scores between “Before” and “After” are equal.

$$H_0 : \mu_{\text{Before}} = \mu_{\text{After}}$$

Alternative hypothesis (H_1): The mean difference scores between “Before” and “After” are different.

$$H_1 : \mu_{\text{Before}} \neq \mu_{\text{After}}$$

The null hypothesis is rejected only if the p-value is less than 0.05 ($p < 0.05$), indicating a statistically significant difference. Otherwise, the null hypothesis cannot be rejected.

Additionally, the System Usability Scale (SUS) scores were calculated following standard scoring guidelines [79] [80], which involve reverse scoring of even-numbered items and summing adjusted responses before multiplying the total by 2.5 to yield a usability score out of 100.

$$\text{SUS Score} = 2.5 \times \sum_{i=1}^{10} S_i$$

In this study, the data was prepared in Google Sheets and exported to Python, where the statistical calculations were performed using the `scipy.stats` library.

Qualitative data, which included participants' open-text responses, field notes, and direct observations made during gameplay, were used not as standalone evaluative evidence, but rather to contextualize and interpret the quantitative outcomes. These qualitative elements provided a richer understanding of participant behaviour and perceptions, helping to uncover subtleties that may not be reflected in numeric data alone.

7.5 Results

7.5.1 Demographics

A total of 14 teenagers, aged between 15 and 18 years old, participated in the study. The gender distribution was relatively balanced, comprising 8 male and 6 female participants. In terms of prior exposure, 8 out of the 14 participants reported having previously played an educational game, which may have influenced their receptiveness to the intervention. When asked about their awareness of where their clothing is made, responses were varied: six indicated “sometimes,” while four answered “yes” and another four responded “no.” This diversity in baseline awareness underscored the relevance of the game in addressing existing knowledge gaps.

7.5.2 Before Playing (Baseline Awareness & Attitudes)

The pre-game questionnaire revealed a moderately informed cohort regarding fast fashion. Most participants rated their knowledge of fast fashion as moderate to high, generally giving scores between 3 and 5 stars. Similarly, their understanding of fashion’s environmental impact fell mostly in the mid-range, with 3-star responses being the most common.

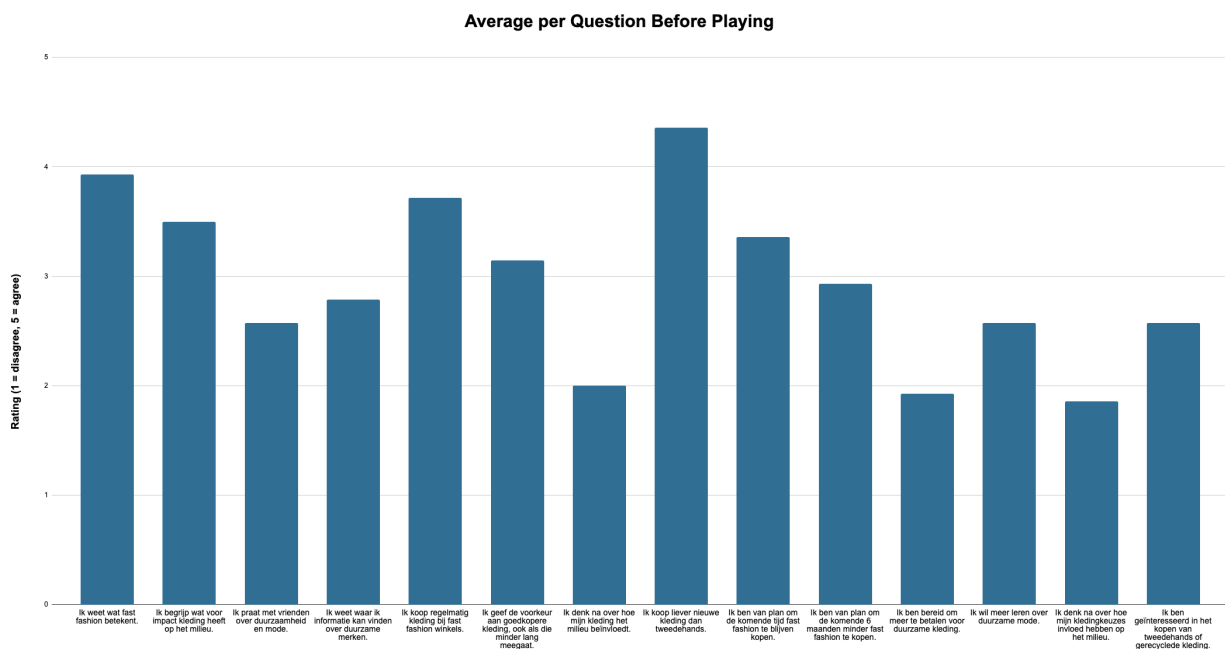


Figure 7.1: Average score per question before playing the game

Social discussions surrounding sustainability were relatively rare: many participants gave 2- or 3-star ratings when asked whether they talk about sustainability with friends. Awareness of sustainable brands and where to find information about them was also generally low to moderate, suggesting a lack of accessibility or interest. Participants’ shopping behaviours reflected a dominant preference for affordability. Many reported that they regularly buy fast fashion, with a clear preference for inexpensive clothing, even if it was of lower quality

or durability. Environmental impact appeared to be a secondary consideration, if at all, and the majority expressed a stronger interest in buying new clothes rather than second-hand items. Intentions surrounding future behaviour were mixed. While some participants showed openness to reducing fast fashion consumption, many remained undecided. Willingness to pay a higher price for sustainable clothing was generally low, reinforcing the notion that financial constraints or value perceptions heavily influence youth purchasing decisions.

7.5.3 After Playing (Impact of the Game)

Post-intervention analysis, using the Wilcoxon signed-rank test, revealed statistically Post-intervention data indicated several meaningful shifts in participants' awareness, attitudes, and intentions regarding fashion and sustainability. The most substantial change was observed in the statement "I think about how my clothing choices affect the environment," which showed a significant increase from an average of 2.00 to 3.21 ($p = 0.0066$). This result suggests that the game encouraged players to reflect more deeply on the environmental consequences of their fashion-related decisions. Similarly, participants demonstrated an improved understanding of key concepts. The average score for "I know what fast fashion means" increased from 3.93 to 4.57, a statistically significant shift ($p = 0.0473$). Understanding of fashion's environmental impact also improved, with scores rising from 3.50 to 4.14. Although this change was not statistically significant at the conventional 0.05 level ($p = 0.0578$), it approaches significance and supports the interpretation of increased cognitive engagement. In addition, knowledge of where to find information about sustainable brands improved meaningfully, as the statement "I know where I can find information about sustainable brands" rose from 2.79 to 3.64 ($p = 0.0276$). These findings reflect that the game was successful in increasing both conceptual clarity and practical awareness.

Statement	Mean Before	Mean After	Std Before	Std After	p-value	Direction
Ik weet wat fast fashion betekent.	3.93	4.57	1.07	0.51	0.0473	More agreeing after
Ik begrijp wat voor impact kleding heeft op het milieu.	3.50	4.14	1.02	0.86	0.0578	More agreeing after
Ik praat met vrienden over duurzaamheid en mode.	2.57	2.79	1.16	1.19	0.3657	More agreeing after
Ik weet waar ik informatie kan vinden over duurzame merken.	2.79	3.64	1.12	1.22	0.0276	More agreeing after
Ik koop regelmatig kleding bij fast fashion winkels.	3.71	3.71	1.44	1.49	1.0000	No change
Ik geef de voorkeur aan goedkopere kleding, ook als die minder lang meegaat.	3.14	3.71	1.41	1.49	0.0339	More agreeing after
Ik denk na over hoe mijn kleding het milieu beïnvloedt.	2.00	3.21	0.96	1.31	0.0066	More agreeing after
Ik koop liever nieuwe kleding dan tweedehands.	4.36	4.29	1.01	0.99	0.5271	Less agreeing after
Ik ben van plan om de komende tijd fast fashion te blijven kopen.	3.36	3.36	1.50	1.34	0.6658	No change
Ik ben van plan om de komende 6 maanden minder fast fashion te kopen.	2.93	3.36	1.44	1.28	0.2982	More agreeing after
Ik ben bereid om meer te betalen voor duurzame kleding.	1.93	2.29	0.83	0.99	0.1025	More agreeing after
Ik wil meer leren over duurzame mode.	2.57	2.79	1.40	1.19	0.4054	More agreeing after
Ik denk na over hoe mijn kledingkeuzes invloed hebben op het milieu.	1.86	2.64	0.86	1.08	0.0640	More agreeing after
Ik ben geïnteresseerd in het kopen van tweedehands of gerecyclede kleding.	2.57	3.14	1.40	1.41	0.2074	More agreeing after

Figure 7.2: All results

Participants also reported greater interest in exploring more sustainable choices. The statement "I am interested in buying second-hand or recycled clothing" rose from 2.57 to 3.14, and "I want to learn more about sustainable fashion" increased from 2.57 to 2.79. Although these improvements were not statistically significant ($p = 0.2074$ and $p = 0.4054$ respectively), the consistent upward trend indicates a general movement toward curiosity and openness to change. A similar trend was observed in the statement "I think about how my clothing choices influence the environment," which rose from 1.86 to 2.64. This change also approached statistical significance ($p = 0.0640$), reinforcing the idea that the game stimulated reflective thinking.

In terms of behavioural intentions, the results were more mixed. The statement "I am willing to pay more for sustainable clothing" showed a modest increase from 1.93 to 2.29 ($p = 0.1025$), while "I intend to reduce

my fast fashion purchases over the next six months” rose from 2.93 to 3.36 ($p = 0.2982$). These shifts suggest early signs of behavioural reconsideration, even if they did not reach statistical significance. Notably, the statement “I plan to continue buying fast fashion” remained unchanged at 3.36 ($p = 0.6658$), indicating that certain consumption habits may be more resistant to change and likely influenced by external factors such as peer norms, identity, or affordability.

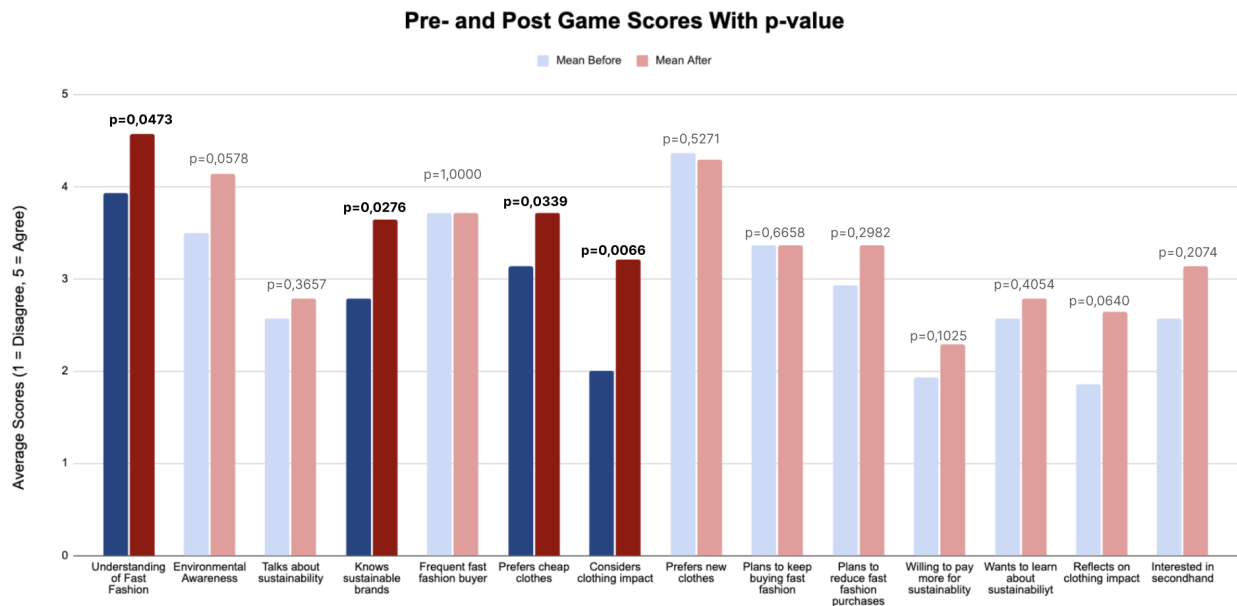


Figure 7.3: Statistically significant findings

A small but statistically significant increase was seen in the statement “I prefer cheaper clothing, even if it does not last as long,” which rose from 3.14 to 3.71 ($p = 0.0339$). This result stands in contrast to the more sustainability-oriented shifts and highlights the persistent importance of price as a deciding factor for many participants. It underscores a tension between ideals and reality: although awareness may rise, economic concerns can continue to drive purchasing behaviour. Other shifts were more modest. The frequency of talking with friends about sustainability and fashion increased slightly from 2.57 to 2.79 ($p = 0.3657$), as did the statement “I feel more confident discussing these topics with others,” based on qualitative responses and post-game reflections. The preference for new over second-hand clothing showed a very slight decline, from 4.36 to 4.29 ($p = 0.5271$), suggesting only minimal impact on actual preference, even though interest in alternative options had grown.

In summary, the game appeared to have the strongest impact on participants’ self-awareness, knowledge, and reflection. Statistically significant changes occurred in key conceptual areas such as defining fast fashion, understanding environmental consequences, and knowing where to find sustainable alternatives. While fewer behavioural intentions shifted significantly, many showed upward trends. However, the sustained preference for cheap clothing and the unchanged intention to continue purchasing fast fashion point to the deeper structural and economic barriers that were not easily addressed in a single session. These findings indicate that while the game effectively initiated reflection and knowledge-building, sustained behaviour change may require

additional support, resources, or repeated interventions.

7.5.4 Usability and System Usability Scale (SUS) Insights

The System Usability Scale (SUS) yielded an average score of 64.1 for the game. This is slightly below the commonly cited benchmark of 68 [81], often considered the threshold for acceptable usability.

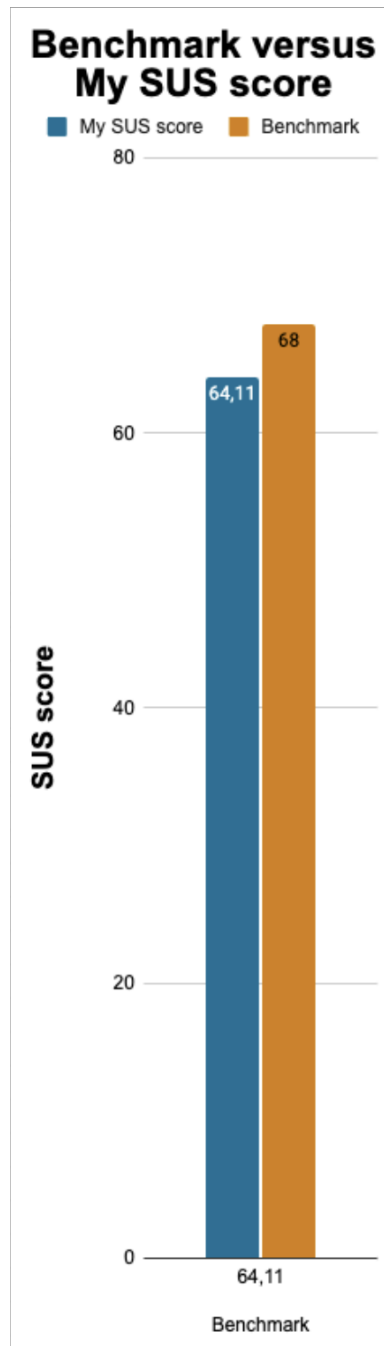


Figure 7.4: My score vs. industry benchmark

Participants generally responded positively to individual usability items. For example, the average score

for “I thought the system was easy to use” was 4.0, and “I felt very confident using the system” scored 4.07. Responses to negatively phrased items such as “I found the system unnecessarily complex” were generally low, suggesting that most users did not perceive the game as overly complicated or inconsistent. Several participants noted that the game components were well integrated. However, qualitative comments revealed that some confusion existed around the game rules, particularly at the beginning. One participant indicated that they would need help to use the system, and a few others noted the presence of a learning curve.

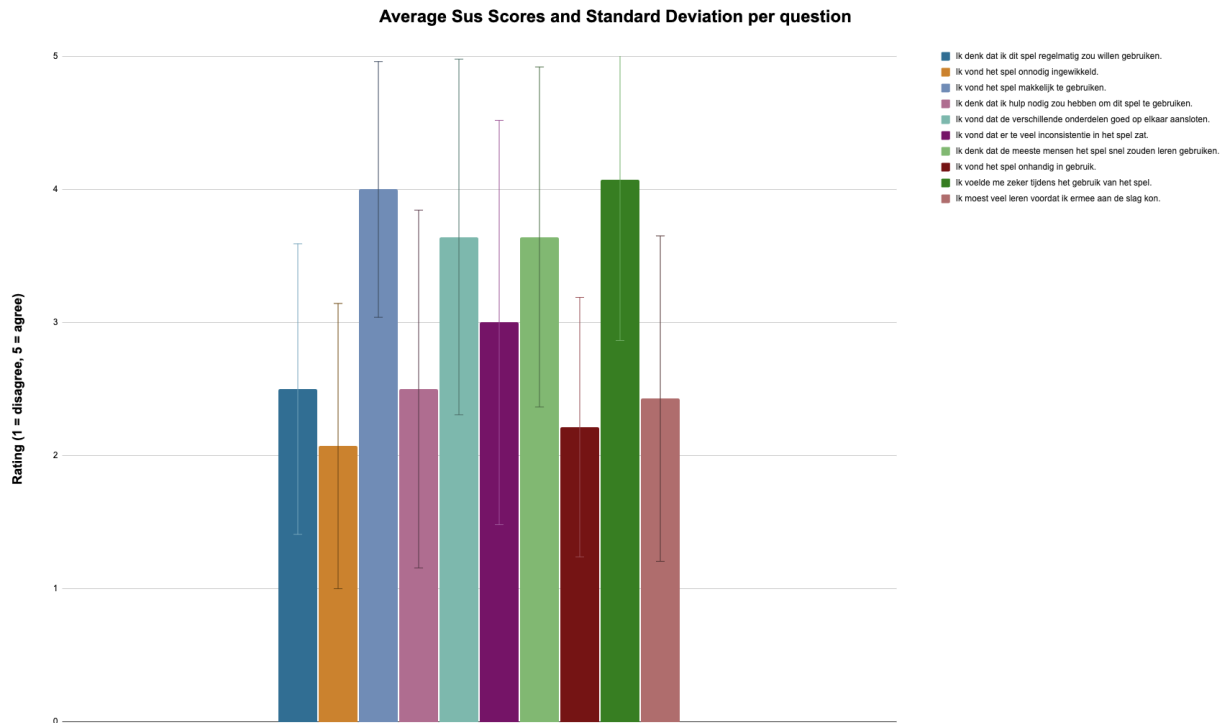


Figure 7.5: Mean SUS score per questions

Observations during the sessions also indicated that engagement with the SUS questionnaire varied. Some participants appeared to complete it quickly or without close attention, and there were few clarifying questions asked about the items. This may reflect varying levels of familiarity with the format, as the SUS includes both positively and negatively worded items that require careful reading. Overall, the SUS results, combined with participant comments and observations, suggest that while the game was generally perceived as usable, there were areas, especially around initial clarity, that could be improved in future iterations.

7.5.5 Open Questions and Qualitative Insights

Open-ended responses provided further depth to the quantitative findings. When asked what stood out most, many participants mentioned the challenge cards and the environmental information included in the game. These elements were seen as engaging and thought-provoking, especially by those who had not previously encountered such content. While some participants stated that the game was fun and insightful, others commented that it contained little new information, suggesting varied levels of prior knowledge. Responses to what surprised them were also diverse. Some were not surprised at all, indicating either prior familiarity or

low impact, while others noted surprise at the game's structure, particularly the division into three phases. When asked whether the game changed how they think about fashion, answers were mixed. About half of the participants reported a change in perspective, particularly in terms of reflecting before purchasing clothing. Others, however, felt unaffected or sceptical. This variability reflects the complex and personal nature of behavioural change, which cannot be expected to shift uniformly through a single intervention. Suggestions for improvement were practical and often constructive. Several participants requested clearer instructions and rules, suggesting that initial confusion affected their experience. Others proposed adding more interactive elements, such as a timer or digital enhancements. A few noted that the presence of a teacher or facilitator to introduce the game would have been beneficial. Suggestions also included adding a step-by-step guide to make the experience more accessible, particularly for younger or less engaged players.

7.5.6 Observations During Gameplay

Observational data during the game sessions supported many of the findings above. Most participants were cooperative, communicative, and genuinely engaged. When prompted to answer specific cards, they were able to provide thoughtful responses and reference specific items. Although some required time to become familiar with the challenge cards, once they understood the concept, they engaged with them enthusiastically. Due to school policy, students were not allowed to use mobile phones, so QR codes included in the game were not scanned during the session. However, some participants mentioned or asked about the QR codes, indicating curiosity and potential if devices were permitted. The game duration was well-balanced. One deck was split into two groups and used for two parallel sessions of 3-4 players each. Each group was able to finish the game within 20 minutes, and notably, after completion, many participants continued browsing through the cards they had not yet seen, showing a sustained interest in the content. A recurring theme in discussions was the importance of price in clothing decisions. Many participants explained that they prefer cheap clothes because of limited budgets. Even though the game raised awareness about sustainability, cost remained a major barrier to behavioural change.

7.5.7 Strengths

The intervention succeeded in raising awareness and knowledge about fast fashion and environmental sustainability. Participants generally found the game user-friendly, and many praised the coherence and challenge presented by the card-based format. Several participants reported an intention to reflect more on their clothing habits and showed increased openness to sustainable behaviours.

7.5.8 Areas for improvement

Several aspects of the game could be enhanced for future iterations. Rules and instructions need to be clarified to reduce confusion, especially in unguided settings. Further attention should be given to engaging younger or less interested participants, potentially by adding more interactive features or teacher-facilitated introductions. Given that cost remains a key barrier to sustainable choices, the game might benefit from incorporating realistic scenarios or alternatives that acknowledge this concern. Finally, more context-sensitive feedback tools could improve the quality of post-game data collection, especially for younger audiences who may struggle with traditional survey formats like the SUS.

7.6 Validity of the Analysis

While the Wilcoxon Signed Rank Test does not require the assumption of normality, it does assume that the distribution of differences between paired observations is approximately symmetrical. This assumption is important to ensure the validity of the test results.

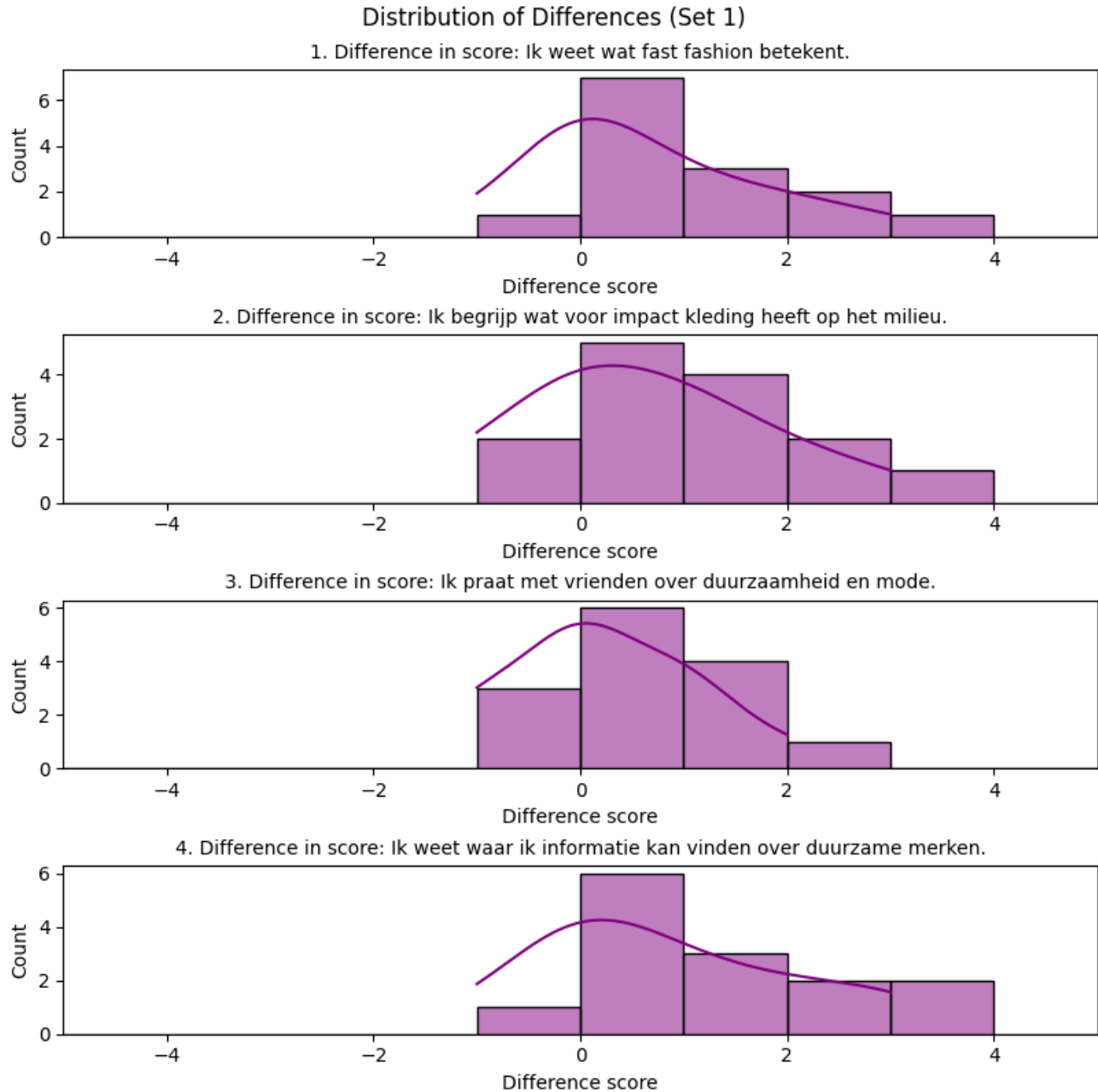


Figure 7.6: Distribution of differences per questions

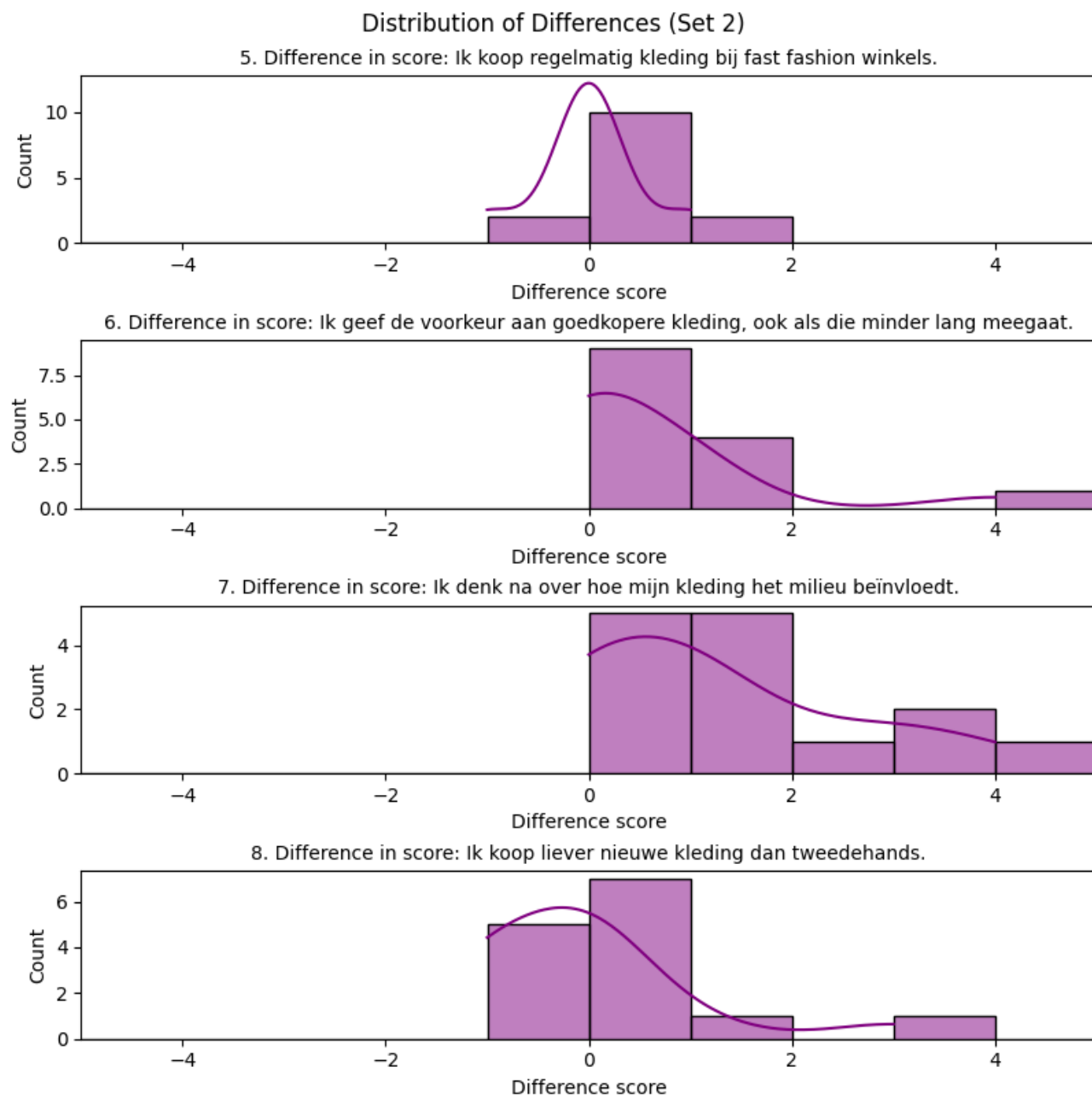
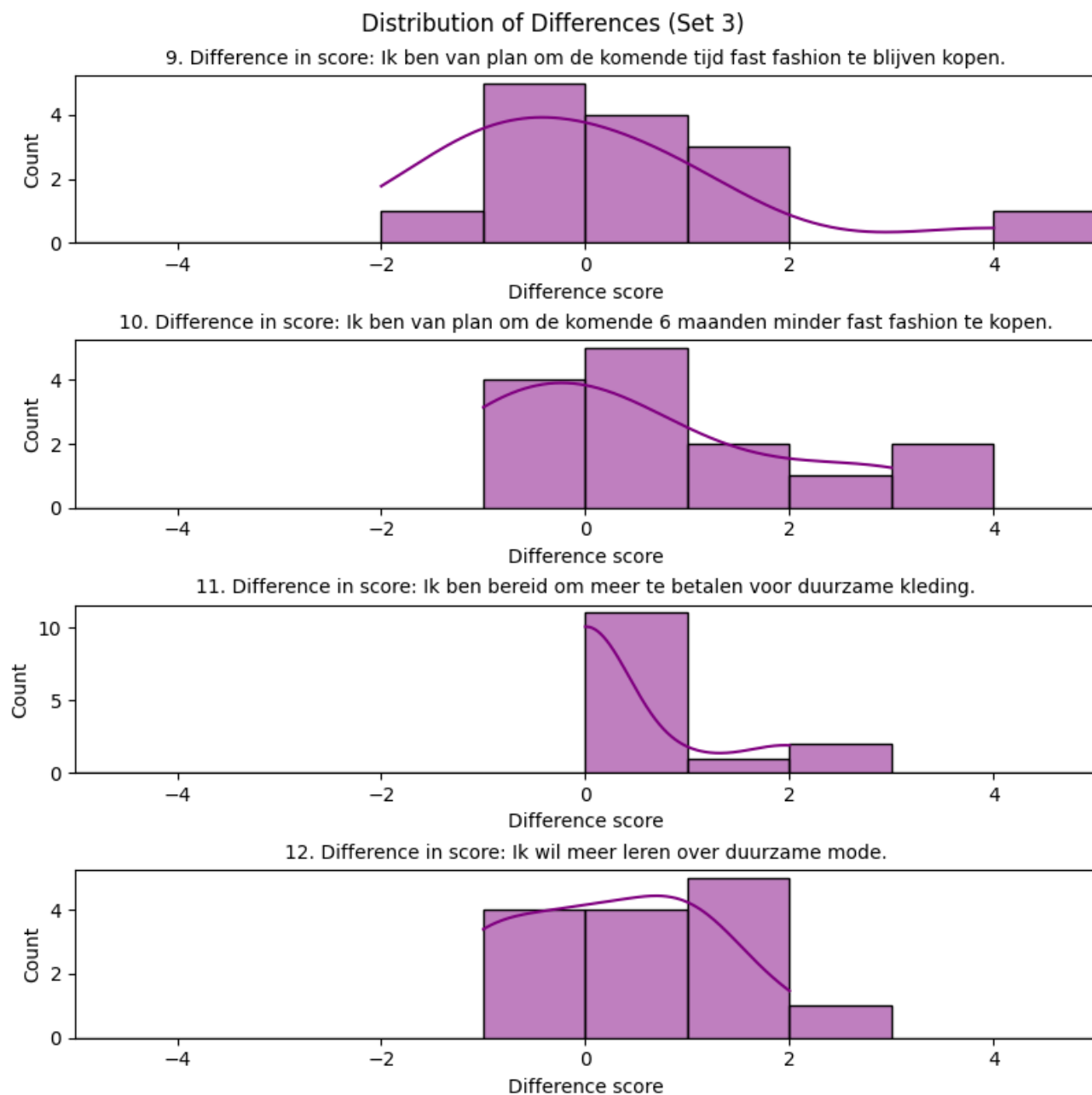


Figure 7.7: Distribution of differences per questions

**Figure 7.8:** Distribution of differences per questions

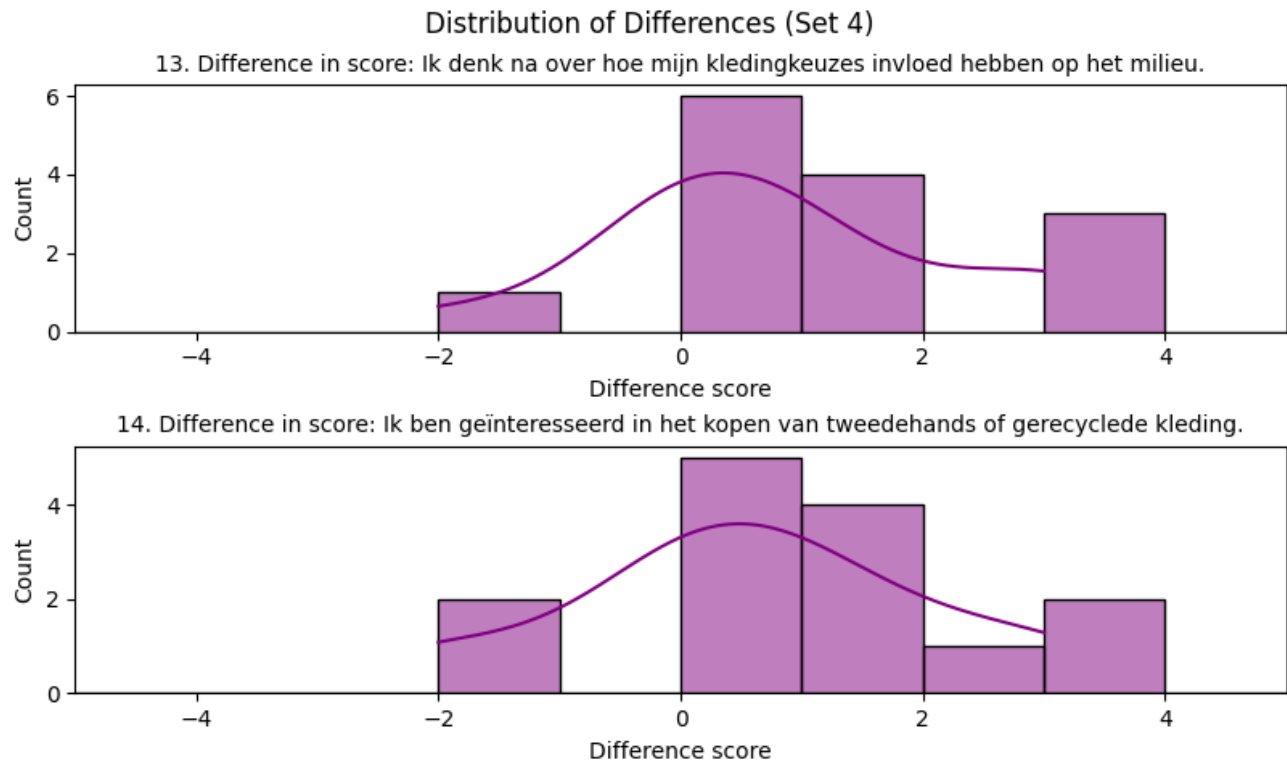


Figure 7.9: Distribution of differences per questions

In the data, certain questions exhibited clear asymmetry in their difference score distributions, which could affect the reliability of the test outcomes for those items. Specifically:

Question 11: "Ik ben bereid meer te betalen voor duurzame kleding" (I am willing to pay more for sustainable clothing)

Question: "Ik geef de voorkeur aan goedkope kleding ook als die minder lang meegaat" (I prefer cheap clothing even if it lasts less long)

For these questions, the difference distributions were obviously very unsymmetrical, indicating that the Wilcoxon test assumptions may be violated. Consequently, the test results for these particular items should be interpreted with caution.

Chapter 8

Discussion & Future Work

The aim of this project was to design, implement, and evaluate an intervention that promotes sustainable fashion choices among young people. Central to the intervention was the idea that peer reflection and social dialogue could act as a behavioural lever: rather than rely solely on individual motivation, the game encouraged players to talk, reflect, and ideally influence one another through positive peer pressure. The design intentionally included collaborative play, discussion prompts, and post-game challenges to create a supportive environment for critical thinking about fashion consumption habits.

8.1 Knowledge and Awareness

The data clearly shows that the game succeeded in increasing knowledge and awareness. Across multiple Likert-scale statements, participants reported gains in understanding what fast fashion is, the environmental impact of clothing, and where to find sustainable alternatives. For example, the statement “Ik weet waar ik informatie kan vinden over duurzame merken” (“I know where to find information about sustainable brands”) showed a high mean increase of +0.86, which was statistically significant ($p = 0.0276$). Responses to “Ik denk na over hoe mijn kleding het milieu beïnvloedt” (“I think about how my clothing affects the environment”) also improved significantly, with a mean increase of +1.21 ($p = 0.0066$). These findings align with the cognitive component of behaviour change, suggesting that the game effectively raised participants’ conscious awareness of the issue. This aligns with the early stages of the Transtheoretical Model (TTM), particularly the precontemplation and contemplation stages, where recognizing a problem is the first step toward change. Educational interventions like this game play a crucial role in helping people move from one stage to the next. For example, raising awareness and providing new information can shift individuals from precontemplation (not seeing a problem) to contemplation (thinking about change). By helping participants reflect on their values, habits, and the consequences of their actions, the game may encourage them to consider making actual changes in behaviour, setting the stage for preparation and eventual action. Additionally, this increase in understanding supports the attitude and perceived behavioural control elements of the Theory of Planned Behaviour (TPB), suggesting the game helped participants form more favourable attitudes toward sustainable fashion and feel more capable of acting on them.

8.2 Peer Reflection and Social Influence

A core concept in the game design was the use of collaborative, peer-based gameplay. The hypothesis was that by creating space for shared reflection and dialogue, players would not only absorb information but also feel subtle social pressure to adopt more sustainable behaviours. This idea was grounded in Social Learning Theory, which posits that people learn behaviours by observing and interacting with others, as well as Diffusion of Innovations, which explains how new ideas spread within social groups. However, the actual impact of peer dynamics appeared more modest than anticipated. While some participants reported increased dialogue with friends about fashion and sustainability, the statement “Ik praat met vrienden over duurzaamheid en mode” (“I talk with friends about sustainability and fashion”) showed only a small mean increase of +0.21, which was not statistically significant ($p = 0.3657$). The overall effect was therefore weaker compared to the significant knowledge gains. In post-surveys and interviews, participants often reported finding the game fun and informative but did not mention strong normative pressure from others, nor a clear sense of social accountability. This suggests that while the game offered opportunities for social interaction, it may not have activated the mechanisms of peer influence deeply enough. According to Identity-Based Motivation, behaviour change is more likely when individuals see the desired behaviour as part of their social identity and when social approval reinforces it. In this case, players did engage in reflection, but it may have lacked the intensity, visibility, or group reinforcement needed to trigger this dynamic.

8.3 Behavioural Intentions and Actual Change

One of the most important goals of the intervention was to reduce intention to buy fast fashion, and ideally, to spark behaviour change. The results here were mixed. Participants showed slight increases in positive intentions. For example, “Ik ben van plan om de komende 6 maanden minder fast fashion te kopen” (“I intend to reduce my fast fashion purchases over the next six months”) showed a positive mean shift of +0.43, but this change was not statistically significant ($p = 0.2982$). Other behavioural statements reflected similar patterns. “Ik koop liever nieuwe kleding dan tweedehands” (“I prefer to buy new clothes over second-hand”) remained nearly unchanged, showing only a very slight decrease of -0.07 ($p = 0.5271$). Likewise, intention to continue buying fast fashion (“Ik ben van plan om fast fashion te blijven kopen”) remained exactly the same before and after the game, with no change in mean score and a p -value of 1.0000. This reflects the well-known intention-behaviour gap, where individuals may express pro-environmental attitudes or intentions but fail to translate these into action. Behaviour change frameworks such as Habit Formation theory emphasize that motivation must be paired with ability and external triggers to result in sustained action. In this project, the post-game “challenge” was hosted on a separate website, creating friction and weakening the feedback loop between intention and follow-up behaviour. Additionally, participants may have lacked practical alternatives or strategies to act on their intentions, such as peer support, or reminders.

8.4 Usability and Engagement

The System Usability Scale (SUS) score for the game, which averaged 64.1, falls slightly below the commonly accepted threshold of 68, typically interpreted as the benchmark for acceptable usability. Although this score suggests moderate usability, it does not reflect the full complexity of the context in which the game was used, nor does it necessarily indicate fundamental flaws in the game’s design. Instead, there are several possible explanations, both methodological and behavioural, that help interpret this lower-than-expected result.

Firstly, it appears that not all participants fully understood the structure or wording of the SUS questionnaire. While the SUS is a well-established tool for evaluating user experience, it includes both positively and negatively phrased statements that require a certain level of attention and comprehension. Given the context, a group of secondary school students, it is likely that some users may have misread or misunderstood specific items. Especially inverted questions may lead to confusion [82] Some questions may have been interpreted literally or answered inconsistently due to a lack of experience with survey instruments, leading to unreliable or contradictory results.

Secondly, it is important to consider the setting and the mindset of participants during the evaluation. The game was played during school hours, and the questionnaire was administered immediately afterwards. Observationally, it seemed that several students were more focused on the opportunity to be outside their regular classroom environment rather than on giving careful, reflective feedback. This setting may have led to a lack of seriousness or rushed responses, particularly from those who saw the activity as a break from routine rather than a meaningful educational exercise. This effect, where participants are physically present but cognitively disengaged, is a well-known challenge in school-based research and can significantly impact the validity of self-reported measures like the SUS. Moreover, when the game was played with a group consisting solely of boys, the group dynamic appeared different, with the evaluation taken less seriously compared to mixed groups or groups of girls. This suggests that gender dynamics may influence engagement and the perceived seriousness of the intervention and its evaluation. Teenagers, in general, are unpredictable in their responses and behaviours, and the school setting may not be optimal for this type of intervention, especially as many participants appeared to be in a precontemplation phase regarding sustainable fashion rather than the contemplation stage for which the game was designed.

Another key factor that might have influenced the low score is the social environment in which the game was played, and the survey was completed. Although the game was specifically designed to foster peer dialogue and leverage positive peer pressure to stimulate reflection and behavioural change, some participants may have felt uncomfortable asking for help or clarifications, either about the game itself or the questionnaire. This reluctance to seek support, especially in a group setting, could stem from social anxiety, fear of appearing less competent, or simply the desire not to stand out. In some cases, peer pressure was even weaker than anticipated, as players collectively agreed that money was a higher priority than sustainability, thereby undermining the intended normative influence. As a result, participants who encountered confusion may have opted to guess or respond randomly rather than request assistance, leading to distorted data.

Furthermore, it is possible that a subset of participants did not take the questionnaire seriously or may have responded arbitrarily. This may be due to survey fatigue, low motivation, or the perception that the activity was of low personal relevance. Such attitudes are particularly common when young users are asked to engage in written feedback without immediate, tangible consequences or rewards. Although the game itself was well received in informal feedback, this positive impression was not consistently reflected in the SUS scores, highlighting a disconnect between observed engagement and quantitative evaluation.

Finally, the usability score may reflect a gap between the intentions of the design and the users' expectations or preferences. While the game was developed to encourage dialogue, reflection, and gradual attitude change around fast fashion, some students may have expected a more traditionally entertaining or game-like experience. If they compared this educational tool to commercial games they use in their personal time, the perceived usability and engagement level might have suffered, even though the tool was functional and purposeful from a learning perspective. Taken together, these insights suggest that the SUS score of 64.1 should not be interpreted in isolation. It is a limited indicator that may be more reflective of situational and behavioural factors than the actual usability of the game. Future iterations of the project should consider more tailored evaluation methods for younger audiences, such as structured interviews, focus groups, or simpler and more

context-sensitive feedback tools that better capture their experiences and insights.

8.5 Recommendations for Future Development

To enhance the effectiveness and long-term impact of the sustainability card game, several improvements can be made to the design, structure, and delivery of the intervention. These suggestions aim to deepen engagement, support behaviour change, and scale the concept to broader contexts.

8.5.1 Enhancing Social Reinforcement and Visibility

Peer influence was a foundational concept in the game design, aimed at encouraging sustainable behaviour through shared reflection and social dialogue. However, the data revealed only a modest increase in participants talking with friends about sustainability (+0.21 mean increase, not statistically significant), and observations suggested weak peer pressure overall. Many participants agreed that financial concerns outweighed sustainability in their decision-making, further limiting normative influence. To better harness peer dynamics, future iterations should explicitly embed social reinforcement mechanisms. This could include leaderboards, public pledges, or team-based challenges that require collective achievements, such as sourcing secondhand outfits and sharing group photos. By making sustainable actions more visible within the group, players may experience stronger descriptive and injunctive norms that support behaviour change.

8.5.2 Integrating Challenges Directly Into Gameplay

One of the clearer weaknesses identified was the separation of post-game challenges from the core gameplay. Observations showed that although many participants continued browsing cards after finishing, the official “challenge” follow-up took place on a separate website, adding friction and weakening the feedback loop between intention and action. While this disconnect may have been partly influenced by the “no phone” rule during gameplay, habit formation theory highlights that sustained behaviour change requires ongoing triggers and low barriers to engagement. Currently, the game experience is mostly limited to a single play session, while the follow-up website remains passive and primarily engages those already highly motivated. This separation risks players losing momentum after the initial session, reducing the likelihood that intentions translate into real actions. To address this, future versions should embed follow-up challenges directly into the gameplay as “missions” or next-step prompts that flow naturally from each round. Additionally, introducing time-based elements, such as reminders to revisit the game or complete specific tasks after a few days, would encourage ongoing engagement. These reminders, delivered via push notifications or emails, would create consistent prompts that reinforce habits and keep players accountable. By integrating these interactive, time-sensitive features, the game would evolve from a one-off experience into a sustained intervention that actively supports players in turning intentions into meaningful, lasting sustainable behaviours.

8.5.3 Providing Practical and Emotional Support

While the current format encourages discussion, some players may still lack a clear sense of how to take sustainable action. To bridge this gap, the game could incorporate short in-game resources, like tips on thrifting, repairing, or discovering ethical brands. Emotional storytelling, such as narratives around garment worker rights, can also deepen players’ moral connection to sustainability. Moreover, offering practical incentives

like discount codes for sustainable stores could reduce financial barriers and enhance perceived behavioural control, increasing the likelihood of action.

8.5.4 Evaluating Long-Term Behavioural Impact and Scaling

This project tested a sustainability card game prototype with a small sample of 14 Dutch high school students, mostly male, aged 15 to 18, in groups smaller than the game's maximum capacity of eight players. For the evaluation, the originally English-language game was partially translated into Dutch, but some English elements remained, which may have affected comprehension and engagement. The study took place primarily in classroom settings during lessons, where student motivation was sometimes driven by the desire to leave the lesson rather than genuine interest in the game content. Additionally, during these sessions, a “no phone” rule was enforced, which limited the ability to integrate follow-up digital challenges or reminders within the gameplay flow. The evaluation relied on short-term self-reported measures collected before and immediately after a single gameplay session. While this approach provided valuable insights into immediate changes in knowledge, attitudes, and intentions, it limits understanding of the game's potential for sustained behavioural change. To improve future research and increase the validity of findings, the game should be tested with a larger and more diverse participant pool, including younger teens (ages 13–15) and a more balanced gender distribution. Testing should also involve playing multiple sessions over time to support habit formation through repetition and reinforcement. Moreover, evaluating the game outside formal classroom environments, such as youth centres, after-school programs, or informal social settings where teens are allowed to use their phones freely, could create a more natural motivation to engage, helping to foster deeper reflection and real behaviour change. Given the game's design supports up to eight players, future studies should explore larger group dynamics, which may enhance social interaction and peer influence—key factors in behavioural change theories. Additionally, future evaluations should use the fully English version of the game and test it with native English speakers, as well as other international audiences. This will help identify cultural or linguistic factors influencing engagement and impact, and support the game's localization and scalability. To better understand whether changes in intentions translate into real-world behaviour, longer-term tracking is essential. This could be achieved through behavioural tracking tools such as photo diaries, periodic check-in prompts, or partnerships with sustainable fashion apps and secondhand clothing platforms to log actual purchasing or clothing-use behaviours up to one or three months post-intervention.

Chapter 9

Conclusion

The central research question guiding this project was: How to design a product that helps to effectively influence teenagers to reduce their intent to consume fast fashion? To address this, a sustainability-themed card game prototype was developed with the aim of promoting awareness, encouraging peer reflection, and ultimately influencing young people's intentions and behaviours around fast fashion consumption. The game incorporated collaborative play, discussion prompts, and post-game challenges, seeking to leverage social dialogue and positive peer pressure as key behavioural levers.

Based on the evaluation, the prototype succeeded in significantly increasing participants' knowledge and awareness of fast fashion's environmental impact and where to find sustainable alternatives. This demonstrates that the design effectively supports the cognitive aspects of behaviour change, particularly raising awareness and shaping attitudes toward sustainable fashion choices among teenagers. However, when it comes to the behavioural component, specifically reducing the intent to buy fast fashion, the results were more mixed. Although there were slight positive shifts in intentions, these changes were not statistically significant, and actual peer influence and social dialogue about sustainability showed only minimal increases.

This outcome suggests that while the prototype successfully engages teenagers at the level of information and reflection, it does not yet fully bridge the gap to sustained behavioural change or significantly alter social norms around fast fashion consumption. The limited impact on peer influence and behavioural intentions highlights the challenge of translating awareness into action, especially in a school environment where external factors like group dynamics, motivation, and contextual constraints play a strong role.

Overall, the project demonstrates that designing a product to influence teenagers' fast fashion consumption requires more than raising awareness, it needs stronger mechanisms to embed sustainable behaviour into social identity and everyday habits. The prototype provides a valuable foundation by creating an engaging and informative experience, but future iterations must deepen social reinforcement, reduce barriers to follow-up actions, and provide practical support for behaviour change. This work contributes important insights into how educational games can be designed for sustainability, while emphasizing the need for ongoing development and longitudinal evaluation to more effectively influence teenagers' consumption intentions and behaviours in the long term.

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Appendix A

AI usage

“During the preparation of this work, the author(s) used ChatGPT, Consensus, and Grammarly Premium in order to structure the content, help with coding, and find academic sources. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the work.”

Appendix B

Lotus diagrams



Reduce friction and barriers for alternatives	Challenges	Every day of the week has a meaning: "Sewing on Sunday"	Comitment bracelet	Tags or stickers on phone/ frequently used items: "Do i really need this"	Put nudges on the mirrior	Rebellion: "Im not basic"	Style with me prompts	Intentional dressing
Rewards for good behaviour	Habit Change	Give them a plan	Motivational patches or stickers	Physical nudges	Tags with the real cost of the garment	Signature outfit	Play into identity and self expression	Reinforce their identity as a...
Replace habits, dont remove it	Delay buying items	Swap clothes instead of buying new	Physical counter of how many clothes you bought	Journal to reflect in	Reminders of goals	Patches	Mantra: "a ... person cares about..."	Moodboards
Groups for style inspiration	Stories of regret purchases	Openly pledge to a cause or challenge (accountability)	Habit Change	Physical nudges	Play into identity and self expression	Ai chat bot to help you regulate emotions	Reflection: "Why am I buying"	Library log for swap clothes: "Last worn by..."
Group challenges and leaderboards	Social Influence	Sustainable influencers	Social Influence	Decrease intention to buy fast fashion	Emotional triggers	Replay/trigger regret buys	Emotional triggers	Show the future consequences (negative/positive)
IG and TikTok video's	Buddy system to keep eachother accountable	Swap clothes with peers	Visualize wardrobe	Educational and sustainable alternatives	Financial awareness	Show that the fashion industry harms things they love	Show the human side of the industry. Every item is made by a person	Video's and photos with stories
Find alternatives in your wardrobe based on inspiration	Outfit generator with exsisting items	Scan an item and get outfit inspration	Brands transparency and sustainability	Stories of workers, advocates, and buyers	Craft workshops to repair	Encourage financial literacy	Reframe cost per wear	Budget style challenges
AR clothing try on	Visualize wardrobe	Style with items from your closet challenge	Who made my clothes campaign	Educational and sustainable alternatives	Show the life cycle of a garment	Promote clothing swaps	Financial awareness	Compare items/outfits money wise
Colour/style finder	Track what you actually wear	Lock screen with wardrobe items. (people usually forget they own pieces)	Highlight (local) alternatives	Fashion Footprint	Reduce, Reuse, Repair, Recycle,	what else could this be used for	Visualize money saved	Show the "true" cost for an item

Figure B.1: Lotus Diagram 1



Complete challenges first	Paywalls	Delay/no messages from apps	Items go to the wishlist first before the chart	Lock screen reminders	Positive framing	Tutorials for crafts	Reinforce Identity	Badges and patches
Complete captcha first	Delay purchases	Wait timers before buying	Confirmations "are you sure?"	Nudging	Art posters in public spaces	Self expression kit DIY	Personalize	Style identities
Future you prompt before you check out (how would future you feel?)	Suggest sustainable options first	Pop ups when browsing "Why are you browsing"	Give a plan	Learn from examples	Show/emphasize sustainable first	Style based on a mood	AI check in buddy	Your fashion fingerprint
Visualize the effects (landfills)	Clothing regrets stories	Social consequences reminders	Delay purchases	Nudging	Personalize	Log shopping urges	Weekly reflection log	Give them a plan
Create empathy for the people who made your clothes	Using emotions	Environmental impact reminder	Using emotions	Closing the intention-action gap	Reflection/Feedback	Tracker for rewards	Reflection/Feedback	See what you saved by not buying
Gamify it with a pet that gets sad when you buy clothes	Log feeling after buying	Show an item after a few washes (not worth buying)	Change the digital landscape	Gamification	Accountability	Monthly report	Water/CO2 saved	Celebrate sustainable choices
Change UX for fast fashion brands	Remove distractions	Unfollow fast fashion brands and influencers	Real life perks	Habit streaks	Progression visualized	App to check in	Buddy system	School events
Transparency scale for items	Change the digital landscape	Change colours to lessen stimulation	Loose when you buy clothes	Gamification	Point system	App calling you out if you are on a fashion website	Accountability	Public commitments
Sustainable influencers	Sustainable items are pushed	Extention in chrome	Bingo	Competition	Challenges	OOTD	Bets and leaderboards	Group challenges

Figure B.2: Lotus Diagram 2

Appendix C

Text for Cards and Website

All texts for the cards and the website can be found on the following few pages.
(Outfit Cards, Challenge Cards, Action Cards and the challenges on the Website)

Nederlands

Outfit kaarten

	Outfit	Garment	Question/reflection
Impact	The Impact Fit	Carbon Coat	Hoe draagt kleding bij aan het klimaat?
	Stijl met een groter plaatje.	Makers Shirt	Weet je wie jouw kleding maakt? Zou je het verschil merken als je het wel weet?
		Fair Stiche Pants	Denk je dat kleding eerlijk gemaakt wordt? Hoe zou jij dat kunnen checken?
		Choice Chucks	Kies jij bewust je kleding en schoenen? Waar let jij op bij een nieuwe aankoop?
Think Twice	Think Twice Fit	Impulse Jacket	Koop je weleens kleding spontaan? Wat gebeurt er daarna met die spullen?
	Stijl die je aan het denken zet.	Need-or-Want Tee	Vraag jij jezelf soms af: heb ik dit kledingstuk echt nodig? Wat bepaalt jouw keuze?
		Boredom Hoodie	Shop jij ook wel eens uit verveling? Wat zou je dan anders kunnen doen?
		Regret Jeans	Heb je iets dat je nooit draagt? Waarom denk je dat je het kocht?
Shop Smarter	Smart Shopper Fit	Thrifed Blazer	Heb je ooit tweedehands kleding gekocht? Wat vond je daarvan?
	Stijl die slim en duurzaam is.	Linnen Skirt	Denk je wel eens aan het materiaal bij het kiezen van je kleding? Behalve Linnen, wat zijn andere duurzame stoffen?
		No-Waste Tote	Wat zijn manieren om afval bij kleding te verminderen? Hoe draag jij bij?
		Sustainable Sling	Wat maakt een merk goed? Ken je merken die duurzaam zijn?
Influence	Influences Fit	Hype Jacket	Laat jij je wel eens leiden door trends? Waarom?
	Stijl die iedereen volgt.	FOMO Flips	Heb je wel eens kleding gekocht omdat vrienden het hadden? Hoe voelde dat daarna?
		Group Shop Shirt	Shop jij vaak samen met vrienden? Wat merk je daarvan?
		Peer Pressure Pants	Voel je druk van anderen om mee te doen met de mode?

Feelings	Feelings Fit	Mood Dress	Hoe kies je wat je draagt? Heeft kleding invloed op je gevoel?
	Stijl die je mood een boost geeft.	Feel Good Blazer	Draag jij wel eens iets om je beter te voelen? Wat werkt voor jou?
		Quick Fix Kicks	Koop je wel eens iets om je stemming snel te verbeteren? Wat doe je nog meer?
		Emo Scarf	laat je je wel eens overhalen door je emoties om dingen te kopen?
Better Together	Better Together Fit	Change Together Tee	Kun je anderen helpen met goede keuzes? Wat zou je samen kunnen doen?
	Stijl die verbindt.	Circle Skirt	Wat betekent samen duurzaam shoppen voor jou? Ken je plekken waar dat kan?
		Movement jacket	Zou je mee willen doen aan een kledingactie? Wat zou jij dan doen?
		Supporter cap	Wie of wat jij steun jij met je kleding? Hoe?
Budget	Budget Fit	Budget Jeans	Let jij op prijs bij kleding? Wat vind jij belangrijker: prijs of kwaliteit?
	Stijl die je portemonnee blij maakt.	Investment Coat	Wanneer is iets 'waardevol' voor jou? Zou je liever minder kopen en meer bewaren?
		Capsule Tee	Wat zijn jouw favoriete kledingstukken? Waarom?
		Fix-It Vest	Repareer jij wel eens je kleding? Wat bespaar je daarmee?
Planet Proof	Planet Proof Fit	Water Wise Jeans	Weet jij hoeveel water er nodig is voor je kleding? Zou dat je keuze veranderen?
	Stijl die de aarde respecteert.	Pollution Free shirt	Hoe kan kleding de natuur beschermen? Wat doe jij zelf?
		Low Impact Kicks	Wat betekent 'een lage impact' voor jou bij kleding of schoenen?
		Trash Less Scarf	Wat kun jij doen om minder afval te maken? Welke kleine stap neem jij?
Taking Action	Activism Fit	First step	Wat is jouw eerste stap naar bewuster

		Sneakers	shoppen? Wie neem jij mee?
	Stijl die in beweging zet.	Small Changes Beanie	Welke kleine verandering vind jij makkelijk? Wat zou je nog willen proberen?
		Voice Tee	Hoe laat jij zien waar je voor staat? Wil je dat meer mensen dat doen?
		Impact Jacket	Wat betekent impact maken voor jou? Hoe zou kleding daarbij kunnen helpen?
Ethical Brands	Ethical Brands Fit	Better Brand blazer	Wat maakt een merk 'goed' of 'ethisch'? Let jij daarop? Ken jij ethische merken?
	Stijl die bewust kiest.	Check the Tag Skirt	Kijk jij naar labels? Wat zoek je dan?
		Wise Buy Coat	Waarom zou je kiezen voor kwaliteit? Hoe lang zou je iets willen dragen?
		Brand Ally tee	Als je een merk kon kiezen, wat is dan belangrijk? Wat zou jij promoten?
Identity	Identity Fit	Statement Sweater	Hoe laat jouw stijl zien wie je bent? Draag je kleding die ergens voor staat?
	Stijl om met trots te dragen.	Values Vest	Hoe kies jij kleding die bij jou en je waarden past?
		Reinvented scarf	Heb jij ooit kleding op een creatieve manier gedragen, anders dan het bedoeld was?
		Purpose pants	Hoe kies jij kleding die bij je past? Wat maakt kleding betekenisvol?
Habits	Habit Fit	Habit Hoodie	Welke kleding draag je het vaakst? Waarom juist die?
	Stijl die makkelijk vol te houden is.	Speak up Tee	Wat zou je anderen willen vertellen over shoppen? Wat wil jij leren?
		Everyday Pants	Hoe past duurzaamheid in jouw leven? Wat zou je anders willen doen?
		Vision Vest	Hoe zie jij de toekomst van mode? Wat zou jij willen veranderen?

Challenge Kaarten

Ik kan minstens ... duurzame stoffen noemen in 30s.
Ik kan minstens ... items uit mijn kast noemen die tweedehands zijn in 30s.
Ik kan minstens ... fast fashion merken noemen in 30s.
Ik kan minstens ... kleding items die ik langer dan 3 jaar heb noemen in 30s.
Ik kan minstens ... manieren noemen om een oud shirt opnieuw te gebruiken in 30s.
Ik kan minstens ... manieren noemen om een kledingstuk te repareren zonder naald en draad in 30s.
Ik kan minstens ... items in mijn kast noemen die wit of zwart zijn/bevatten in 30s.
Ik kan minstens ... items in mijn kast noemen die rood of oranje zijn/bevatten in 30s.
Ik kan minstens ... items in mijn kast noemen die geel of groen zijn/bevatten in 30s.
Ik kan minstens ... items in mijn kast noemen die blauw of paars zijn/bevatten in 30s.
Ik kan minstens ... duurzame merken noemen in 30s.
Ik kan minstens ... winkels of plekken waar je tweedehands kan shoppen noemen in 30s.
Ik kan minstens ... manieren noemen om impuls aankopen te vermijden in 30s.
Ik kan minstens ... redenen noemen waarom mensen kleding kopen in 30s.
Ik kan minstens ... manieren noemen om duurzamer met kleding om te gaan in 30s.

Actie Kaarten

Clothing Swap	Ruil één van je kaarten (blind) met een speler naar keuze.
Copycat	Pak blind één kaart van een andere speler. Beantwoord je een reflectievraag? Dan mag je de kaart houden. Zo niet, dan moet je 'm afleggen.
Closet Shuffle	Iedereen geeft één kaart door naar links.
Challenge Mirror	Kies een andere speler en laat ze een Challenge-kaart doen. Weigeren ze? Dan slaan ze hun volgende beurt over. Lukt het? Dan verdienen ze de kaart.
Style Spy	Kijk stiekem naar twee kaarten van één speler.
Trend Block	Kies een speler: zij mogen hun volgende beurt niet spelen.
Shop & Snatch	Je mag deze beurt twee spelers om een kaart vragen in plaats van één.

Website Challenges

Nederlands	
Repareer vóór je vervangt	Kies één beschadigd kledingstuk uit je kast en probeer het te repareren. (met de hand, bij een kleermaker, etc) Documenteer het proces.
Label Detective	Kies 5 kledingstukken uit je kast en onderzoek de materialen en merken. Zijn ze duurzaam? Ethisch geproduceerd? Schrijf een korte reflectie over wat je hebt ontdekt.
Capsule Wardrobe	Kies 20 kledingstukken om de komende 2 weken te dragen. Reflecteer op of het aankleden makkelijker of moeilijker werd, en hoe je outfit-herhaling ervaarde.
Kledingruil	Organiseer of bezoek een kledingruil met vrienden, klasgenoten of familie. Reflecteer op hoe het voelde om kleding weg te geven én om "nieuwe" tweedehands items te krijgen.
Koopgedrag in kaart	Kijk terug naar je laatste 5 kleding aankopen. Wat was je motivatie bij elk stuk? Prijs? Merk? Mode? Duurzaamheid? Wat zou je nu anders doen?

Mijn kleding in waarde	Schrijf op hoeveel elk kledingstuk (ongeveer) kostte. Vergelijk dat met hoe vaak je het hebt gedragen. Welke stukken waren het investeren waard?
Outfit keuze	Waarom heb je deze outfit vandaag gekozen? Wat gebeurt er in je hoofd? Wat bepaalt je keuze: comfort, uiterlijk, geweten?
Favoriete kledingstuk	Kies je meest gedragen item. Waarom draag je het zo vaak? Wat zegt het over jouw stijl, waarden of herinneringen?
De vergeten vijf	Pak 5 kledingstukken die je het afgelopen jaar niet hebt gedragen. Waarom niet? Wat vertelt dat over je koopgedrag of veranderende smaak?
Wat als ik niets nieuws koop?	Stel jezelf een challenge: koop één maand lang geen nieuwe kleding. Schrijf op wat er gebeurt. Mentaal, praktisch, sociaal.
Mijn snelste aankoop	Denk terug aan het kledingstuk dat je het snelst hebt gekocht, zonder er echt over na te denken. Draag je het nog? Wat was je motivatie toen?
De 'wat als'-kast	Zoek in je kast naar een item die je altijd al hebt bewaart "voor het geval dat..." (een feest, een maat, een moment). Wat zegt dat over consumptie, vooruitdenken en loslaten?
Kleding als cadeau	Geef een kledingstuk aan iemand anders dat jij niet meer draagt, maar waar je ooit veel van hield. Wat doet dat met je gevoel van bezit en delen?
Kleding als beloning	Denk aan een keer dat je kleding kocht als beloning. Waarvoor beloonde je jezelf? Voelde het terecht? Wat zou je in plaats daarvan kunnen doen?

Engels

Outfit Cards

	Outfit	Garment	Question/reflection
Impact	The Impact Fit	Carbon Coat	How does clothing contribute to the climate?
	Style with a bigger picture.	Makers Shirt	Do you know who makes your clothes? Would it make a difference if you did?
		Fair Sticked Pants	Do you think clothing is made fairly? How could you check that?
		Choice Chucks	Do you consciously choose your clothes and shoes? What do you pay attention to when making a new purchase?
Think Twice	Think Twice Fit	Impulse Jacket	Do you ever buy clothes spontaneously? What happens to those items afterward?
	Style that makes you think.	Need-or-Want Tee	Do you ever ask yourself: do I really need this item? What influences your choice?
		Boredom Hoodie	Do you ever shop out of boredom? What could you do differently?

		Regret Jeans	Do you own something you never wear? Why do you think you bought it?
Shop Smarter	Smart Shopper Fit	Thrifted Blazer	Have you ever bought clothes second-hand? What was that like?
	Style that's smart and sustainable.	Linnen Skirt	Do you ever think about the material when choosing your clothes? Besides linen, what are other sustainable fabrics?
		No-Waste Tote	What are ways to reduce clothing waste? How do you contribute?
		Sustainable Sling	What makes a brand good? Do you know any sustainable brands?
Influence	Influences Fit	Hype Jacket	Do you ever let yourself be guided by trends? Why?
	Style that everyone follows.	FOMO Flips	Have you ever bought clothes because your friends had it? How did that feel afterward?
		Group Shop Shirt	Do you often shop with friends? What do you notice about that?
		Peer Pressure Pants	Do you feel pressure from others to follow fashion?
Feelings	Feelings Fit	Mood Dress	How do you choose what you wear? Does clothing affect your mood?
	Style that gives your mood a boost.	Feel Good Blazer	Do you ever wear something to feel better? What works for you?
		Quick Fix Kicks	Do you ever buy something to quickly boost your mood? What else do you do?
		Emo Scarf	Do you ever let your emotions persuade you to buy things?
Better Together	Better Together Fit	Change Together Tee	Can you help others make better choices? What could you do together?
	Style that connects people.	Circle Skirt	What does shopping sustainably together mean to you? Do you know places where that's possible?
		Movement Jacket	Would you want to take part in a clothing campaign? What would you do?
		Supporter Cap	Who or what do you support with your clothing? How?
Budget	Budget Fit	Budget Jeans	Do you pay attention to price when it comes to clothing? What do you find more important: price or quality?
	Style that makes your	Investment Coat	When is something "valuable" to you?

	wallet happy.		Would you rather buy less and keep more?
		Capsule Tee	What are your favorite clothing items? Why?
		Fix-It Vest	Do you ever repair your clothes? What do you save by doing that?
Planet Proof	Planet Proof Fit	Water Wise Jeans	Do you know how much water is needed for your clothes? Would that change your choices?
	Style that respects the Earth.	Pollution Free Shirt	How can clothing protect nature? What do you do yourself?
		Low Impact Kicks	What does “low impact” mean to you when it comes to clothes or shoes?
		Trash Less Scarf	What can you do to create less waste? What small step are you taking?
Taking Action	Activism Fit	First step Sneakers	What's your first step toward more conscious shopping? Who would you bring along?
	Style that drives change.	Small Changes Beanie	What small change do you find easy? What else would you like to try?
		Voice Tee	How do you show what you stand for? Would you like more people to do that?
		Impact Jacket	What does making an impact mean to you? How could clothing help with that?
Ethical Brands	Ethical Brands Fit	Better Brand Blazer	What makes a brand “good” or “ethical”? Do you pay attention to that? Do you know ethical brands?
	Style that makes conscious choices.	Check the Tag Skirt	Do you look at labels? What are you looking for?
		Wise Buy Coat	Why would you choose quality? How long would you like to wear something?
		Brand Ally Tee	If you could choose a brand, what's important to you? What would you promote?
Identity	Identity Fit	Statement Sweater	How does your style show who you are? Do you wear clothes that stand for something?
	Style to wear with pride.	Values Vest	How do you choose clothes that match you and your values?
		Reinvented Scarf	Have you ever worn clothing in a creative way, different from how it was intended?
		Purpose Pants	How do you choose clothing that suits you? What makes clothing meaningful?

Habits	Habit Fit	Habit Hoodie	What clothes do you wear most often? Why those?
	Style that's easy to stick with.	Speak up Tee	What would you like to tell others about shopping? What would you like to learn?
		Movement Pants	How does sustainability fit into your life? What would you like to do differently?
		Vision Vest	How do you see the future of fashion? What would you like to change?

Challenge Cards

I can name at least ... sustainable fabrics in 30 seconds.
I can name at least ... secondhand items from my closet in 30 seconds.
I can name at least ... fast fashion brands in 30 seconds.
I can name at least ... clothing items I've owned for more than 3 years in 30 seconds.
I can name at least ... ways to reuse an old t-shirt in 30 seconds.
I can name at least ... ways to repair a garment without using needle and thread in 30 seconds.
I can name at least ... items in my closet that are white or black (or contain those colors) in 30 seconds.
I can name at least ... items in my closet that are red or orange (or contain those colors) in 30 seconds.
I can name at least ... items in my closet that are yellow or green (or contain those colors) in 30 seconds.
I can name at least ... items in my closet that are blue or purple (or contain those colors) in 30 seconds.
I can name at least ... sustainable clothing brands in 30 seconds.
I can name at least ... places or stores where you can shop secondhand in 30 seconds.
I can name at least ... ways to avoid impulse purchases in 30 seconds.
I can name at least ... reasons why people buy clothes in 30 seconds.
I can name at least ... ways to be more sustainable with clothes in 30 seconds.

Action Cards

Clothing Swap	Swap one of your cards (blind pick) with a player of your choice.
Copycat	Take one card at random from another player. If you answer a reflection question, you get to keep it. If not, you must discard it.
Closet Shuffle	Everyone passes one card to the left.
Challenge Mirror	Pick another player and make them do a Challenge card. If they refuse, they skip their next turn. If they succeed, they earn the card.
Style Spy	Secretly look at two cards from one player's hand.
Trend Block	Pick a player: they are blocked from playing on their next turn.
Shop & Snatch	This turn, you may ask two players for a card instead of one.

Website Challenges

English	
Repair Before You Replace	Choose one damaged or worn item in your closet and try to repair it (by hand, at a tailor, or using iron-on patches). Document the process.
Label Detective	Pick 5 items from your closet and research the materials and brands. Are they sustainable? Ethical? Write a short reflection on what you discovered.
Capsule Wardrobe	Choose 20 versatile pieces to wear for the next 2 weeks. Reflect on whether it made dressing easier or harder, and how you felt about outfit repetition
Clothing Swap	Organize or attend a clothing swap with friends, classmates, or family. Reflect on how it felt to give away clothes vs. get “new” ones second-hand
Track Your Buying Habits	Look back at your last 5 clothing purchases. What motivated each one, price, brand, trend, sustainability? What would you do differently now?
Value vs. Wear	Write down how much each clothing item roughly cost. Compare it to how often you’ve worn it. Which pieces were really worth it?
Outfit Choice	Why did you choose today’s outfit? What goes on in your head, comfort, appearance, conscience?
Favourite Item	Pick your most worn piece of clothing. Why do you wear it so much? What does it say about your style, values, or memories?
The Forgotten Five	Grab 5 items you haven’t worn in the past year. Why not? What does that say about your shopping habits or changing taste?
What If I Buy Nothing New?	Challenge yourself: don’t buy any new clothing for one month. Write about what happens, mentally, practically, socially.
My Fastest Purchase	Think back to the item you bought the quickest, without much thought. Do you still wear it? What drove that decision?
The “Just In Case” Closet	Find an item you’ve kept “just in case…” (a party, a size change, a future moment). What does that say about consumption, control, or letting go?
Clothing as a Gift	Give someone an item you no longer wear but once loved. How does it feel to let it go? What does that say about ownership and sharing?
Clothing as a Reward	Think of a time you bought clothes as a reward. What were you celebrating? Did it really feel deserved? What could be a non-material alternative?

Appendix D

Overview All Cards

All the cards can be found on the following few pages.

Action Card

Challenge Mirror

Pick another player and make them do a Challenge card. If they refuse, they skip their next turn. If they succeed, they earn the card.

Action Card

Style Spy

Secretly look at two cards from one player's hand.

Action Card

Trend Block

Pick a player: they are blocked from playing on their next turn.

Action Card

Shop & Snatch

This turn, you may ask two players for a card instead of one.

Action Card

Copycat

Take one card at random from another player. If you answer the reflection question, you get to keep it. If not, you must discard it.

Action Card

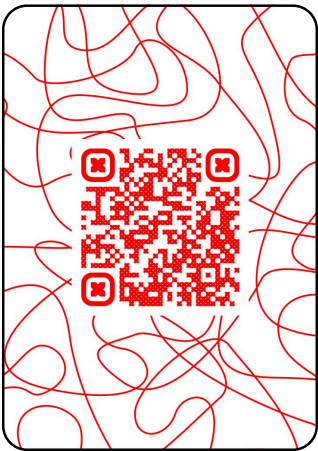
Closet Shuffle

Everyone passes one card to the left.

Action Card

Clothing Swap

Swap one of your cards (blind pick) with a player of your choice.



Challenge Card

I can name at least ... sustainable fabrics in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... secondhand items from my closet in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... fast fashion brands in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... clothing items I've owned for more than 3 years in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... ways to reuse an old t-shirt in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... ways to repair a garment without using needle and thread in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... items in my closet that are white or black (or contain those colors) in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... items in my closet that are red or orange (or contain those colors) in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... items in my closet that are yellow or green (or contain those colors) in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... items in my closet that are blue or purple (or contain those colors) in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... sustainable clothing brands in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... places or stores where you can shop secondhand in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... ways to avoid impulse purchases in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... reasons why people buy clothes in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Challenge Card

I can name at least ... ways to be more sustainable with clothes in 30 seconds.

All players may bid!

→ Challenge completed & it's your card? +2pt
→ Challenge completed but not your card? +1pt
→ Challenge not completed? -1pt

Impact Fit

Style with a bigger picture.

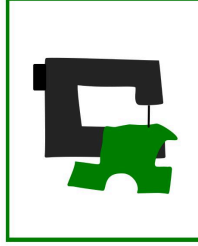


- **Carbon Coat**
- Makers Shirt
- Fair Stitched Pants
- Choice Chucks

How does clothing contribute to the climate?

Impact Fit

Style with a bigger picture.

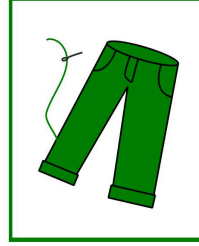


- Carbon Coat
- **Makers Shirt**
- Fair Stitched Pants
- Choice Chucks

Do you know who makes your clothes? Would it make a difference if you did?

Impact Fit

Style with a bigger picture.



- Carbon Coat
- Makers Shirt
- **Fair Stitched Pants**
- Choice Chucks

Do you think clothing is made fairly? How could you check that?

Impact Fit

Style with a bigger picture.



- Carbon Coat
- Makers Shirt
- Fair Stitched Pants
- **Choice Chucks**

Do you consciously choose your clothes and shoes? What do you pay attention to when making a new purchase?

Think Twice Fit

Style that makes you think.

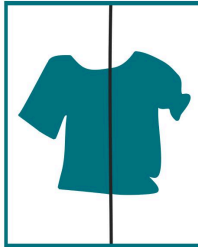


- **Impulse Jacket**
- Need-or-Want Tee
- Boredom Hoodie
- Regret Jeans

Do you ever buy clothes spontaneously? What happens to those items afterward?

Think Twice Fit

Style that makes you think.

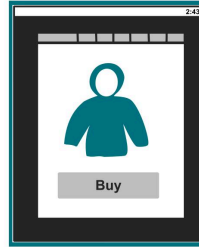


- Impulse Jacket
- **Need-or-Want Tee**
- Boredom Hoodie
- Regret Jeans

Do you ever ask yourself: do I really need this item? What influences your choice?

Think Twice Fit

Style that makes you think.

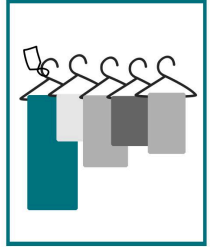


- Impulse Jacket
- Need-or-Want Tee
- **Boredom Hoodie**
- Regret Jeans

Do you ever shop out of boredom? What could you do differently?

Think Twice Fit

Style that makes you think.

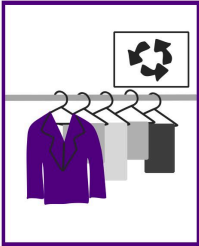


- Impulse Jacket
- Need-or-Want Tee
- Boredom Hoodie
- **Regret Jeans**

Do you own something you never wear? Why do you think you bought it?

Smart Shopper Fit

Style that's smart and sustainable.

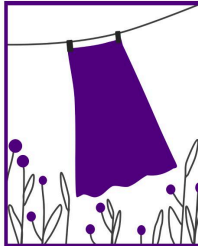


- **Thrifted Blazer**
- Linnen Skirt
- No-Waste Tote
- Sustainable Sling

Have you ever bought clothes second-hand? What was that like?

Smart Shopper Fit

Style that's smart and sustainable.



- Thrifted Blazer
- **Linnen Skirt**
- No-Waste Tote
- Sustainable Sling

Do you ever think about the material when choosing your clothes? Besides linen, what are other sustainable fabrics?

Smart Shopper Fit

Style that's smart and sustainable.

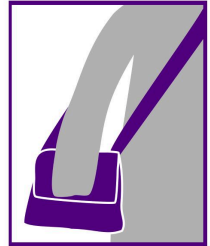


- Thrifted Blazer
- Linnen Skirt
- **No-Waste Tote**
- Sustainable Sling

What are ways to reduce clothing waste? How do you contribute?

Smart Shopper Fit

Style that's smart and sustainable.

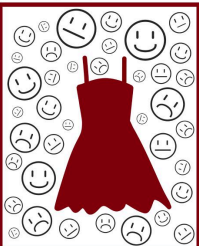


- Thrifted Blazer
- Linnen Skirt
- No-Waste Tote
- **Sustainable Sling**

What makes a brand good? Do you know any sustainable brands?

Feelings Fit

Style that gives your mood a boost.

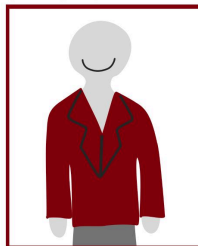


- **Mood Dress**
- Feel Good Blazer
- Quick Fix Kicks
- Emo Scarf

How do you choose what you wear? Does clothing affect your mood?

Feelings Fit

Style that gives your mood a boost.

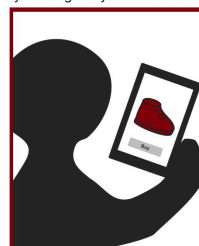


- Mood Dress
- **Feel Good Blazer**
- Quick Fix Kicks
- Emo Scarf

Do you ever wear something to feel better? What works for you?

Feelings Fit

Style that gives your mood a boost.



- Mood Dress
- Feel Good Blazer
- **Quick Fix Kicks**
- Emo Scarf

Do you ever buy something to quickly boost your mood? What else do you do?

Feelings Fit

Style that gives your mood a boost.

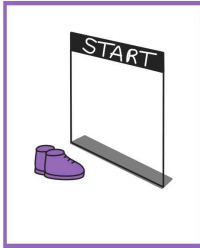


- Mood Dress
- Feel Good Blazer
- Quick Fix Kicks
- **Emo Scarf**

Do you ever let your emotions persuade you to buy things?

Activism Fit

Style that drives change.

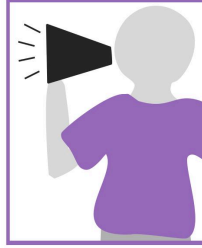


- **First Step Sneakers**
- Small Changes Beanie
- Voice Tee
- Impact Jacket

What's your first step toward more conscious shopping? Who would you bring along?

Activism Fit

Style that drives change.



- First Step Sneakers
- Small Changes Beanie
- **Voice Tee**
- Impact Jacket

How do you show what you stand for? Would you like more people to do that?

Activism Fit

Style that drives change.

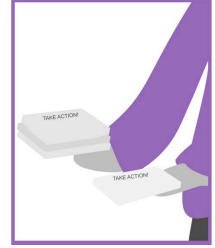


- First Step Sneakers
- **Small Changes Beanie**
- Voice Tee
- Impact Jacket

What small change do you find easy? What else would you like to try?

Activism Fit

Style that drives change.

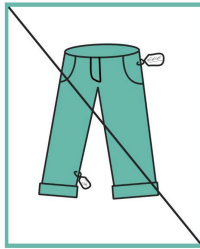


- First Step Sneakers
- Small Changes Beanie
- Voice Tee
- **Impact Jacket**

What does making an impact mean to you? How could clothing help with that?

Budget Fit

Style that makes your wallet happy.

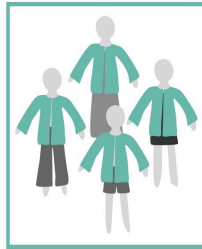


- **Budget Jeans**
- Investment Coat
- Capsule Tee
- Fix-It Vest

Do you pay attention to price when it comes to clothing? What do you find more important: price or quality?

Budget Fit

Style that makes your wallet happy.



- Budget Jeans
- **Investment Coat**
- Capsule Tee
- Fix-It Vest

When is something "valuable" to you? Would you rather buy less and keep more?

Budget Fit

Style that makes your wallet happy.



- Budget Jeans
- Investment Coat
- **Capsule Tee**
- Fix-It Vest

What are your favorite clothing items? Why?

Budget Fit

Style that makes your wallet happy.

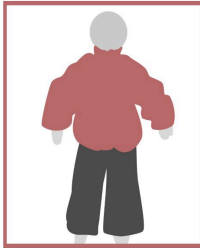


- Budget Jeans
- Investment Coat
- Capsule Tee
- **Fix-It Vest**

How can you reduce clothing waste? What are you already doing?

Identity Fit

Style to wear with pride.



- **Statement Sweater**
- Values Vest
- Reinvented Scarf
- Purpose Pants

How does your style show who you are? Do you wear clothes that stand for something?

Identity Fit

Style to wear with pride.

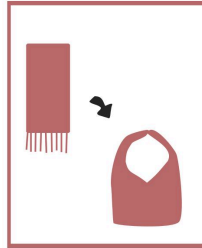


- Statement Sweater
- **Values Vest**
- Reinvented Scarf
- Purpose Pants

How do you choose clothes that match you and your values?

Identity Fit

Style to wear with pride.

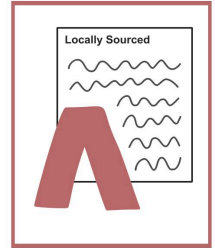


- Statement Sweater
- Values Vest
- **Reinvented Scarf**
- Purpose Pants

Have you ever worn clothing in a creative way, different from how it was intended?

Identity Fit

Style to wear with pride.

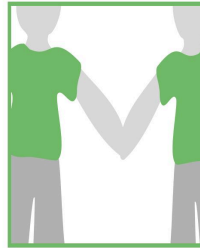


- Statement Sweater
- Values Vest
- Reinvented Scarf
- **Purpose Pants**

How do you choose clothing that suits you? What makes clothing meaningful?

Better Together Fit

Style that connects people.

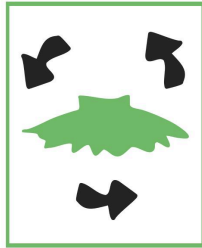


- **Change Together Tee**
- Circle Skirt
- Movement Jacket
- Supporter Cap

Can you help others make better choices? What could you do together?

Better Together Fit

Style that connects people.



- Change Together Tee
- **Circle Skirt**
- Movement Jacket
- Supporter Cap

What does shopping sustainably together mean to you? Do you know places where that's possible?

Better Together Fit

Style that connects people.



- Change Together Tee
- Circle Skirt
- **Movement Jacket**
- Supporter Cap

Would you want to take part in a clothing campaign? What would you do?

Better Together Fit

Style that connects people.



- Change Together Tee
- Circle Skirt
- Movement Jacket
- **Supporter Cap**

Who or what do you support with your clothing? How?

Influences Fit

Style that everyone follows.



- **Hype Jacket**
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Do you ever let yourself be guided by trends? Why?

Influences Fit

Style that everyone follows.



- Hype Jacket
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Have you ever bought clothes because your friends had it? How did that feel afterward?

Influences Fit

Style that everyone follows.

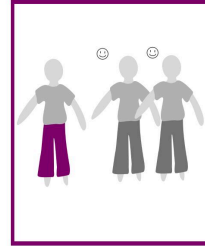


- Hype Jacket
- FOMO Flips
- **Group Shop Shirt**
- **Peer Pressure Pants**

Do you often shop with friends? What do you notice about that?

Influences Fit

Style that everyone follows.



- Hype Jacket
- FOMO Flips
- **Group Shop Shirt**
- **Peer Pressure Pants**

Do you feel pressure from others to follow fashion?

Planet Proof Fit

Style that respects the Earth.

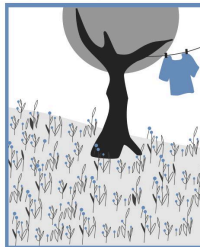


- **Water Wise Jeans**
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

Do you know how much water is needed for your clothes? Would that change your choices?

Planet Proof Fit

Style that respects the Earth.

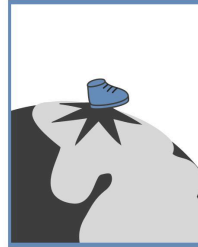


- Water Wise Jeans
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

How can clothing protect nature? What do you do yourself?

Planet Proof Fit

Style that respects the Earth.



- Water Wise Jeans
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

What does "low impact" mean to you when it comes to clothes or shoes?

Planet Proof Fit

Style that respects the Earth.



- Water Wise Jeans
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

What can you do to create less waste? What small step are you taking?

Ethical Brands Fit

Style that makes conscious choices.



- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

What makes a brand "good" or "ethical"? Do you pay attention to that? Do you know ethical brands?

Ethical Brands Fit

Style that makes conscious choices.



- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

If you could choose a brand, what's important to you? What would you promote?

Ethical Brands Fit

Style that makes conscious choices.

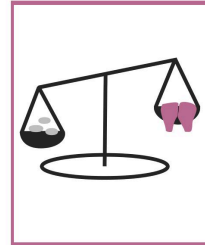


- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Do you look at labels? What are you looking for?

Ethical Brands Fit

Style that makes conscious choices.

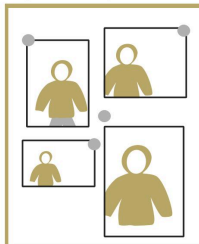


- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Why would you choose quality? How long would you like to wear something?

Habit Fit

Style that's easy to stick with.

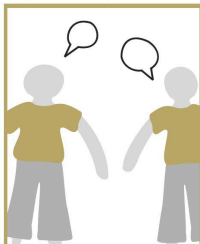


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

What clothes do you wear most often? Why those?

Habit Fit

Style that's easy to stick with.

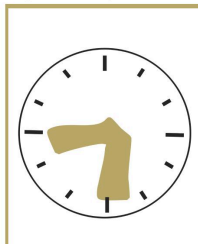


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

What would you like to tell others about shopping? What would you like to learn?

Habit Fit

Style that's easy to stick with.

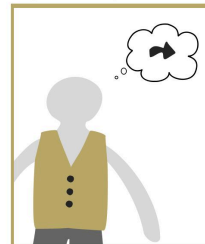


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

How does sustainability fit into your life? What would you like to do differently?

Habit Fit

Style that's easy to stick with.



- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

How do you see the future of fashion? What would you like to change?

Action Card

Challenge Mirror

Laat een speler een Challenge-kaart doen. Weigeren ze? Dan slaan ze hun volgende beurt over. Lukt het? Dan verdienen ze de kaart.

Action Card

Style Spy

Kijk stiekem naar twee kaarten van één speler.

Action Card

Trend Block

Kies een speler: zij mogen hun volgende beurt niet spelen.

Action Card

Shop & Snatch

Je mag deze beurt twee spelers om een kaart vragen in plaats van één.

Action Card

Copycat

Pak blind één kaart van een andere speler. Beantwoord je een reflectievraag? Dan mag je de kaart houden. Zo niet, dan moet je 'm afleggen.

Action Card

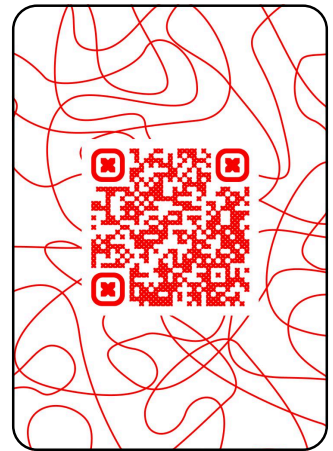
Closet Shuffle

Iedereen geeft één kaart door naar links.

Action Card

Clothing Swap

Ruil één van je kaarten (blind) met een speler naar keuze.



Challenge Card

Ik kan minstens ... duurzame stoffen noemen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... items uit mijn kast noemen die tweedehands zijn in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... fast fashion merken noemen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... kleding items die ik langer dan 3 jaar heb noemen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... manieren noemen om een oud shirt opnieuw te gebruiken in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... manieren noemen om een kledingstuk te repareren zonder naald en draad in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... items in mijn kast noemen die wit of zwart zijn/bevatten in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... items in mijn kast noemen die rood of oranje zijn/bevatten in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... items in mijn kast noemen die geel of groen zijn/bevatten in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... items in mijn kast noemen die blauw of paars zijn/bevatten in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... duurzame merken noemen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... winkels of plekken waar je tweedehands kan shoppen noemen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... manieren noemen om impuls aankopen te vermijden in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... redenen noemen waarom mensen kleding kopen in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Challenge Card

Ik kan minstens ... manieren noemen om duurzamer met kleding om te gaan in 30 seconden.

Alle spelers mogen bieden!

→ Challenge gehaald & Jouw kaart? +2pt
→ Challenge gehaald & niet jouw kaart? +1pt
→ Challenge niet gehaald? -1pt

Impact Fit

Stijl met een groter plaatje.

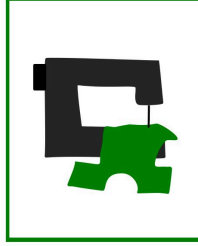


- **Carbon Coat**
- **Makers Shirt**
- **Fair Sticked Pants**
- **Choice Chucks**

Hoe draagt kleding bij aan het klimaat?

Impact Fit

Stijl met een groter plaatje.

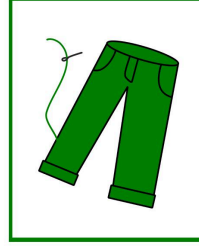


- **Carbon Coat**
- **Makers Shirt**
- **Fair Sticked Pants**
- **Choice Chucks**

Weet je wie jouw kleding maakt?
Zou je het verschil merken als je het wel weet?

Impact Fit

Stijl met een groter plaatje.



- **Carbon Coat**
- **Makers Shirt**
- **Fair Sticked Pants**
- **Choice Chucks**

Denk je dat kleding eerlijk gemaakt wordt?
Hoe zou jij dat kunnen checken?

Impact Fit

Stijl met een groter plaatje.



- **Carbon Coat**
- **Makers Shirt**
- **Fair Sticked Pants**
- **Choice Chucks**

Kies jij bewust je kleding en schoenen? Waar
let jij op bij een nieuwe aankoop?

Think Twice Fit

Stijl die je aan het denken zet.

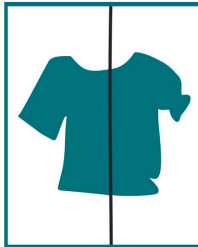


- **Impulse Jacket**
- **Need-or-Want Tee**
- **Boredom Hoodie**
- **Regret Jeans**

Koop je weleens kleding spontaan?
Wat gebeurt er daarna met die kleding?

Think Twice Fit

Stijl die je aan het denken zet.

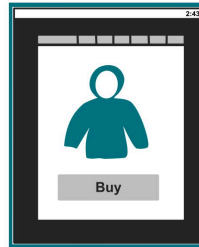


- **Impulse Jacket**
- **Need-or-Want Tee**
- **Boredom Hoodie**
- **Regret Jeans**

Vraag jij jezelf soms af: heb ik dit kledingstuk
echt nodig? Wat bepaalt jouw keuze?

Think Twice Fit

Stijl die je aan het denken zet.

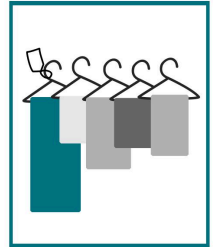


- **Impulse Jacket**
- **Need-or-Want Tee**
- **Boredom Hoodie**
- **Regret Jeans**

Shop jij ook wel eens uit verveling?
Wat zou je dan anders kunnen doen?

Think Twice Fit

Stijl die je aan het denken zet.

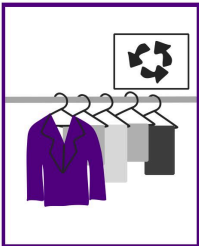


- **Impulse Jacket**
- **Need-or-Want Tee**
- **Boredom Hoodie**
- **Regret Jeans**

Heb je iets dat je nooit draagt?
Waarom denk je dat je het kocht?

Smart Shopper Fit

Stijl die slim en duurzaam is.

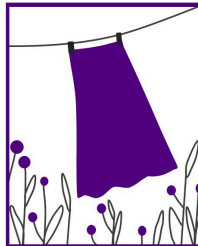


- **Thrifted Blazer**
- **Linnen Skirt**
- **No-Waste Tote**
- **Sustainable Sling**

Heb je ooit tweedehands kleding gekocht?
Wat vond je daarvan?

Smart Shopper Fit

Stijl die slim en duurzaam is.



- **Thrifted Blazer**
- **Linnen Skirt**
- **No-Waste Tote**
- **Sustainable Sling**

Denk je wel eens aan het materiaal bij het kiezen
van je kleding? Behalve Linnen, ken zijn andere
duurzame stoffen?

Smart Shopper Fit

Stijl die slim en duurzaam is.

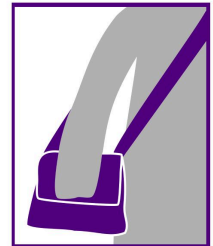


- **Thrifted Blazer**
- **Linnen Skirt**
- **No-Waste Tote**
- **Sustainable Sling**

Wat zijn manieren om afval bij kleding te
verminderen? Hoe draag jij bij?

Smart Shopper Fit

Stijl die slim en duurzaam is.

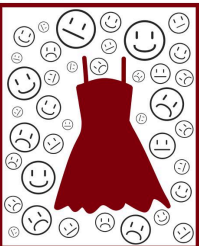


- **Thrifted Blazer**
- **Linnen Skirt**
- **No-Waste Tote**
- **Sustainable Sling**

Wat maakt een merk goed?
Ken je merken die duurzaam zijn?

Feelings Fit

Stijl die je mood beïnvloedt.

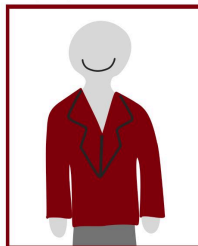


- **Mood Dress**
- **Feel Good Blazer**
- **Quick Fix Kicks**
- **Emo Scarf**

Hoe kies je wat je draagt?
Heeft kleding invloed op je gevoel?

Feelings Fit

Stijl die je mood beïnvloedt.

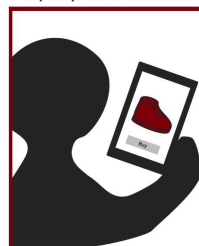


- **Mood Dress**
- **Feel Good Blazer**
- **Quick Fix Kicks**
- **Emo Scarf**

Draag jij wel eens iets om je beter te voelen?
Wat werkt voor jou?

Feelings Fit

Stijl die je mood beïnvloedt.



- **Mood Dress**
- **Feel Good Blazer**
- **Quick Fix Kicks**
- **Emo Scarf**

Koop je wel eens iets om je stemming snel te
verbeteren? Wat doe je nog meer?

Feelings Fit

Stijl die je mood beïnvloedt.

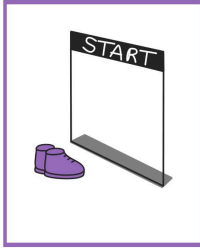


- **Mood Dress**
- **Feel Good Blazer**
- **Quick Fix Kicks**
- **Emo Scarf**

Laat je je wel eens overhalen door je
emoties om dingen te kopen?

Activism Fit

Stijl die in beweging zet.

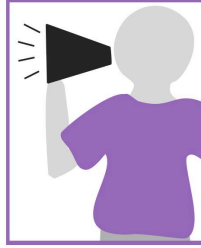


- **First Step Sneakers**
- Small Changes Beanie
- Voice Tee
- Impact Jacket

Wat is jouw eerste stap naar bewuster shoppen? Wie neem jij mee?

Activism Fit

Stijl die in beweging zet.



- First Step Sneakers
- Small Changes Beanie
- **Voice Tee**
- Impact Jacket

Hoe laat jij zien waar je voor staat? Wil je dat meer mensen dat doen?

Activism Fit

Stijl die in beweging zet.

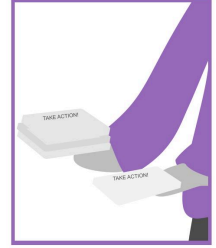


- First Step Sneakers
- **Small Changes Beanie**
- Voice Tee
- Impact Jacket

Welke kleine verandering vind jij makkelijk? Wat zou je nog willen proberen?

Activism Fit

Stijl die in beweging zet.

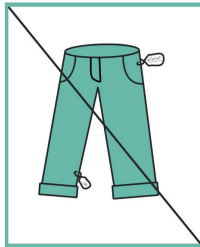


- First Step Sneakers
- Small Changes Beanie
- Voice Tee
- **Impact Jacket**

Wat betekent impact maken voor jou? Hoe zou kleding daarbij kunnen helpen?

Budget Fit

Stijl die je portemonnee blij maakt.

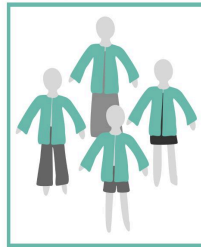


- **Budget Jeans**
- Investment Coat
- Capsule Tee
- Fix-It Vest

Let jij op prijs bij kleding? Wat vind jij belangrijker: prijs of kwaliteit?

Budget Fit

Stijl die je portemonnee blij maakt.



- Budget Jeans
- **Investment Coat**
- Capsule Tee
- Fix-It Vest

Wanneer is iets 'waardevol' voor jou? Zou je liever minder kopen en meer bewaren?

Budget Fit

Stijl die je portemonnee blij maakt.



- Budget Jeans
- Investment Coat
- **Capsule Tee**
- Fix-It Vest

Wat zijn jouw favoriete kledingstukken? Waarom?

Budget Fit

Stijl die je portemonnee blij maakt.

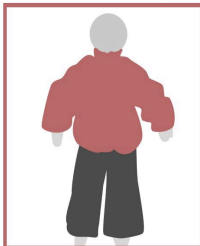


- Budget Jeans
- Investment Coat
- Capsule Tee
- **Fix-It Vest**

Repareer jij wel eens je kleding? Wat bespaar je daarmee?

Identity Fit

Stijl om met trots te dragen.

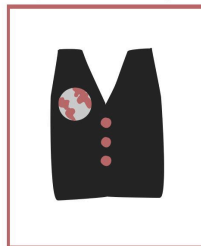


- **Statement Sweater**
- Values Vest
- Reinvented Scarf
- Purpose Pants

Hoe laat jouw stijl zien wie je bent? Draag je kleding die ergens voor staat?

Identity Fit

Stijl om met trots te dragen.

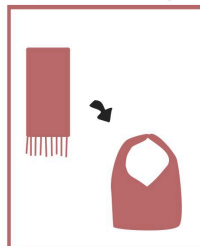


- Statement Sweater
- **Values Vest**
- Reinvented Scarf
- Purpose Pants

Hoe kies jij kleding die bij jou en je waarden past?

Identity Fit

Stijl om met trots te dragen.

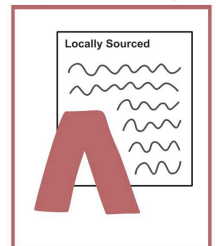


- Statement Sweater
- Values Vest
- **Reinvented Scarf**
- Purpose Pants

Heb jij ooit kleding op een creatieve manier gedragen, anders dan het bedoeld was?

Identity Fit

Stijl om met trots te dragen.

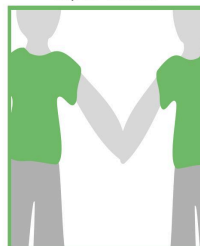


- Statement Sweater
- Values Vest
- Reinvented Scarf
- **Purpose Pants**

Hoe kies jij kleding die bij je past? Wat maakt kleding betekenisvol?

Better Together Fit

Stijl die verbindt.

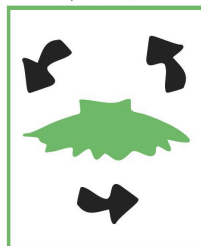


- **Change Together Tee**
- Circle Skirt
- Movement Jacket
- Supporter Cap

Kun je anderen helpen met goede keuzes? Wat zou je samen kunnen doen?

Better Together Fit

Stijl die verbindt.



- Change Together Tee
- **Circle Skirt**
- Movement Jacket
- Supporter Cap

Wat betekent samen duurzaam shoppen voor jou? Ken je plekken waar dat kan?

Better Together Fit

Stijl die verbindt.



- Change Together Tee
- Circle Skirt
- **Movement Jacket**
- Supporter Cap

Zou je mee willen doen aan een kledingactie? Wat zou jij dan doen?

Better Together Fit

Stijl die verbindt.



- Change Together Tee
- Circle Skirt
- Movement Jacket
- **Supporter Cap**

Wie of wat jij steun jij met je kleding? Hoe?

Influences Fit

Stijl die iedereen volgt.



- **Hype Jacket**
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Laat jij je wel eens leiden door trends? Waarom?

Influences Fit

Stijl die iedereen volgt.



- **Hype Jacket**
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Heb je wel eens kleding gekocht omdat vrienden het hadden? Hoe voelde dat daarna?

Influences Fit

Stijl die iedereen volgt.

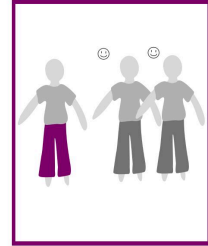


- **Hype Jacket**
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Shop jij vaak samen met vrienden? Wat merk je daarvan?

Influences Fit

Stijl die iedereen volgt.



- **Hype Jacket**
- **FOMO Flips**
- **Group Shop Shirt**
- **Peer Pressure Pants**

Voel je druk van anderen om mee te doen met de mode?

Planet Proof Fit

Stijl die de aarde respecteert.

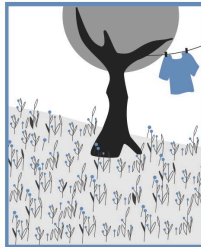


- **Water Wise Jeans**
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

Weet jij hoeveel water er nodig is voor je kleding? Zou dat je keuze veranderen?

Planet Proof Fit

Stijl die de aarde respecteert.

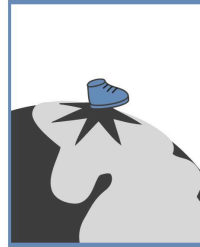


- **Water Wise Jeans**
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

Hoe kan kleding de natuur beschermen? Wat doe jij zelf?

Planet Proof Fit

Stijl die de aarde respecteert.

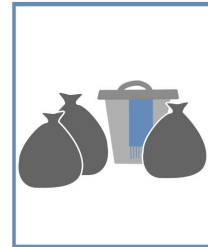


- **Water Wise Jeans**
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

Wat betekent 'een lage impact' voor jou bij kleding of schoenen?

Planet Proof Fit

Stijl die de aarde respecteert.



- **Water Wise Jeans**
- **Pollution Free Shirt**
- **Low Impact Kicks**
- **Trash Less Scarf**

Wat kun jij doen om minder afval te maken? Welke kleine stap neem jij?

Ethical Brands Fit

Stijl die bewust kiest.



- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Wat maakt een merk 'goed' of 'ethisch'? Let jij daarop? Ken jij ethische merken?

Ethical Brands Fit

Stijl die bewust kiest.



- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Als je een merk kon kiezen, wat is dan belangrijk? Wat zou jij promoten?

Ethical Brands Fit

Stijl die bewust kiest.



- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Kijk jij naar labels? Wat zoek je dan?

Ethical Brands Fit

Stijl die bewust kiest.

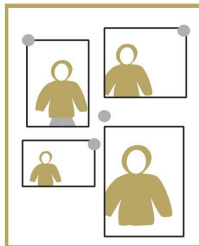


- **Better Brand Blazer**
- **Check the Tag Skirt**
- **Wise Buy Coat**
- **Brand Ally Tee**

Waarom zou je kiezen voor kwaliteit? Hoe lang zou je iets willen dragen?

Habit Fit

Stijl die makkelijk vol te houden is.

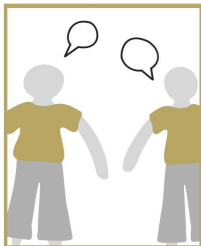


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

Welke kleding draag je het vaakst? Waarom juist die?

Habit Fit

Stijl die makkelijk vol te houden is.

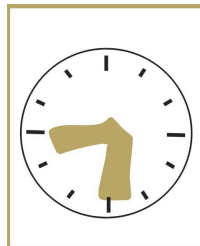


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

Wat zou je anderen willen vertellen over shoppen? Wat wil jij leren?

Habit Fit

Stijl die makkelijk vol te houden is.

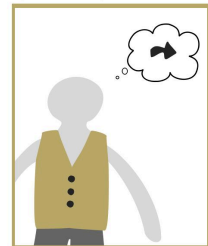


- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

Hoe past duurzaamheid in jouw leven? Wat zou je anders willen doen?

Habit Fit

Stijl die makkelijk vol te houden is.



- **Habit Hoodie**
- **Speak up Tee**
- **Everyday Pants**
- **Vision Vest**

Hoe zie jij de toekomst van mode? Wat zou jij willen veranderen?

Appendix E

Information and Consent Parents/Guardians

The Information letter and consent form given to the Parents/Guardians can be found on the following few pages.

Informatiebrief – Ouders/verzorgers

Geachte ouder/verzorger,

Uw kind is uitgenodigd om deel te nemen aan een onderzoek naar een educatief kaartspel over kleding en duurzaamheid. Dit onderzoek wordt uitgevoerd door Yana Volders, student Creative Technology aan de Universiteit Twente, en is goedgekeurd door de Ethische Commissie.

Waarom dit onderzoek?

Dit onderzoek gaat over hoe jongeren omgaan met kleding en wat hen kan helpen duurzamere keuzes te maken. We onderzoeken of een kaartspel en een online platform jongeren aan het denken zetten over hun kledinggedrag. Het onderzoek bestaat uit twee onderdelen: een fysieke spelsessie en een online interactief onderdeel. We hopen zo beter te begrijpen hoe jongeren gestimuleerd kunnen worden om bewustere keuzes te maken.

Wat houdt deelname in?

- Uw kind speelt een kaartspel van ca. 20 minuten
- Uw kind vult twee korte vragenlijsten in: één vooraf, één achteraf
- Alles bij elkaar duurt het maximaal 45 minuten
- Tijdens het spel maakt de onderzoeker observatienotities

Audio-opname:

Tijdens het spel wil de onderzoeker graag een **geluidsopname (audio-opname)** maken om het gedrag en de gesprekken tijdens het spel beter te kunnen analyseren.

Deze opname is **niet verplicht**: u en uw kind kunnen zelf beslissen of u hiermee akkoord gaat.

Als u **geen toestemming geeft**, wordt uw kind nog steeds op dezelfde manier meegenomen in het onderzoek, alleen dan zonder opname.

Wat gebeurt er met de gegevens?

- Deelnemers blijven anoniem. In verslagen worden geen namen genoemd.
- De gegevens worden vertrouwelijk behandeld. Alleen onderzoekers krijgen toegang tot de data. (de onderzoeker en haar supervisors.)
- Uw kind kan op elk moment stoppen, zonder gevolgen
- Alle gegevens die tijdens het onderzoek worden verzameld, worden aan het einde van het project verwijderd (verwacht op 1 augustus)

Vrijwillige deelname

Deelname is vrijwillig. Omdat uw kind jonger is dan 16 jaar, hebben we ook uw toestemming nodig.

Contact

Heeft u vragen? Neem gerust contact op met:
Yana Volders - y.m.f.q.volders@student.utwente.nl

Als je vragen hebt over je rechten als deelnemer aan dit onderzoek, of als je informatie wilt ontvangen, vragen wilt stellen, of zorgen over deze studie wilt bespreken met iemand anders dan de onderzoeker(s), neem dan contact op met de secretaris van de Ethics Committee Information & Computer Science: ethicscommittee-CIS@utwente.nl

Hartelijk dank voor uw tijd en betrokkenheid!

Met vriendelijke groet,
Yana Volders
Student Creative Technology
Faculteit EEMC - Universiteit Twente

Informed Consentformulier – Ouder/Verzorger

Voor deelnemers onder de 16 jaar

Toestemming	Ja	Nee
Verplicht		
Ik heb de informatie gelezen en begrijp het doel van het onderzoek.	<input type="checkbox"/>	<input type="checkbox"/>
Ik geef toestemming dat mijn kind vrijwillig mag deelnemen.	<input type="checkbox"/>	<input type="checkbox"/>
Ik weet dat mijn kind op elk moment mag stoppen, zonder uitleg.	<input type="checkbox"/>	<input type="checkbox"/>
Ik geef toestemming voor anonieme verwerking van de gegevens van mijn kind.	<input type="checkbox"/>	<input type="checkbox"/>
Optioneel		
Ik geef toestemming voor het maken van een audio-opname tijdens het spel.	<input type="checkbox"/>	<input type="checkbox"/>

Naam ouder/verzorger:

Naam kind:

Relatie tot kind:

Handtekening ouder/verzorger:

Datum: / /

Appendix F

Information and Consent Youth (Ages 12–18)

The Information letter and consent form given to the Teenagers can be found on the following few pages.

Infomatiebrief - Jongere (12-18 jaar)

Onderzoek: Wat doet een spel over kleding met hoe jij kiest wat je draagt?

Hoi!

Ik doe onderzoek naar hoe jongeren denken over kleding, duurzaamheid en shoppen. Ik heb een spel ontwikkeld over dit onderwerp, en we willen graag weten wat je ervan vindt en wat het met je doet.

Waarom doen we dit?

Dit onderzoek gaat over kleding en hoe je daar op een slimme en duurzame manier mee om kunt gaan. We willen weten of een kaartspel en een online platform jou kunnen helpen daar anders over na te denken. Het onderzoek bestaat uit twee delen: een spel dat je speelt met kaarten en een online deel dat je zelf later kunt doen. Zo willen we ontdekken wat werkt.

Wat gaan we doen?

- Je speelt een kaartspel en je mag rondkijken op de interactieve website (ongeveer 20 minuten)
- Je vult 1 korte vragenlijst in vóór het spel en 1 na het rondkijken op de website (samen max. 15 minuten)
- Alles bij elkaar duurt het dus ongeveer 45 minuten
- De onderzoeker kijkt mee tijdens het spel en schrijft op wat er gebeurt]

Audio-opname:

Tijdens het spel wil de onderzoeker **graag een geluidsopname maken**. Zo kan ik later terugluisteren wat er gezegd is, en beter begrijpen hoe jullie het spel spelen.

Het opnemen is **niet verplicht**.

Je mag zelf kiezen of je het goed vindt, samen met je ouder(s).

Zeg je “nee”? Geen probleem! Je mag dan gewoon meedoen, alleen wordt er dan niks opgenomen.

Wat gebeurt er met je antwoorden?

- Jouw antwoorden zijn anoniem, niemand weet wie jij bent
- De gegevens worden alleen voor onderzoek gebruikt
- Alleen onderzoekers krijgen toegang tot de data
- Je mag altijd stoppen, ook als je al begonnen bent
- Al jouw informatie die we tijdens het onderzoek verzamelen (vragenlijsten, interactie met website), wordt aan het einde van het project verwijderd (verwacht op 1 augustus)

Meedoen is helemaal **vrijwillig**. Als je onder de 16 bent, moeten ook je ouders toestemming geven.

Heb je vragen?

Contact: Yana Volders - y.m.f.q.volders@student.utwente.nl

Als je vragen hebt over je rechten als deelnemer aan dit onderzoek, of als je informatie wilt ontvangen, vragen wilt stellen, of zorgen over deze studie wilt bespreken met iemand anders dan de onderzoeker(s), neem dan contact op met de secretaris van de Ethics Committee Information & Computer Science: ethicscommittee-CIS@utwente.nl

Dankjewel als je mee wilt doen!

Yana Volders
Student Creative Technology
Faculteit EEMC - Universiteit Twente

Informed Consent Form – Jongere (12–18 jaar)

Onderzoek: Wat doet een spel over kleding met hoe jij kiest wat je draagt?

Vul in en vink aan wat voor jou geldt:

Toestemming	Ja	Nee
Verplicht		
Ik heb de informatie over het onderzoek gelezen of laten voorlezen. Ik heb vragen kunnen stellen.	<input type="checkbox"/>	<input type="checkbox"/>
Ik doe vrijwillig mee en weet dat ik altijd mag stoppen, zonder uitleg.	<input type="checkbox"/>	<input type="checkbox"/>
Ik begrijp dat ik twee vragenlijsten invul, voor en na het spel.	<input type="checkbox"/>	<input type="checkbox"/>
Ik weet dat de onderzoeker observatienotities maakt tijdens het spel.	<input type="checkbox"/>	<input type="checkbox"/>
Ik geef toestemming voor het gebruik van mijn anonieme antwoorden in onderzoeksrapporten.	<input type="checkbox"/>	<input type="checkbox"/>
Optioneel		
Ik geef toestemming voor het maken van een audio-opname tijdens het spel	<input type="checkbox"/>	<input type="checkbox"/>

Naam deelnemer (jij):

Leeftijd:

Handtekening:

Datum:/...../.....

Ondertekening onderzoeker

Ik verklaar dat ik de inhoud van dit onderzoek heb toegelicht en vragen heb beantwoord.

Naam onderzoeker:

Handtekening:

Datum: / /

Appendix G

Evaluation Form Before

The questionnaire used before playing the game can be found on the following few pages.

Vragenlijst vooraf

Sectie 1: Demografische gegevens

Leeftijd: _____

Gender: _____

Heb je eerder educatieve spellen gespeeld?

[Ja / Nee]

Denk je wel eens na over waar je kleding vandaan komt?

[Ja / Nee / Soms]

Sectie 2: Bewustzijn en Houding

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

	1	2	3	4	5
1. Ik weet wat fast fashion betekent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ik begrijp wat voor impact kleding heeft op het milieu.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Ik praat met vrienden over duurzaamheid en mode.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Ik weet waar ik informatie kan vinden over duurzame merken.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vragenlijst gaat door op de volgende pagina.

Sectie 3: Intentie om fast fashion te kopen

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

	1	2	3	4	5
1. Ik koop regelmatig kleding bij fast fashion winkels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ik geef de voorkeur aan goedkopere kleding, ook als die minder lang meegaat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Ik denk na over hoe mijn kleding het milieu beïnvloedt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Ik koop liever nieuwe kleding dan tweedehands.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Ik ben van plan om de komende tijd fast fashion te blijven kopen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Ik ben van plan om de komende 6 maanden minder fast fashion te kopen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ik ben bereid om meer te betalen voor duurzame kleding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Ik wil meer leren over duurzame mode.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Ik denk na over hoe mijn kledingkeuzes invloed hebben op het milieu.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Ik ben geïnteresseerd in het kopen van tweedehands of gerecyclede kleding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix H

Evaluation Form After

The questionnaire used after playing the game can be found on the following few pages.

Vragenlijst achteraf

Sectie 2: Bewustzijn en Houding

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

- | | 1 | 2 | 3 | 4 | 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Ik weet wat fast fashion betekent. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Ik begrijp wat voor impact kleding heeft op het milieu. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Ik praat met vrienden over duurzaamheid en mode. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Ik weet waar ik informatie kan vinden over duurzame merken. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Sectie 3: Intentie om fast fashion te kopen

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

- | | 1 | 2 | 3 | 4 | 5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Ik koop regelmatig kleding bij fast fashion winkels. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Ik geef de voorkeur aan goedkopere kleding, ook als die minder lang meegaat. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Ik denk na over hoe mijn kleding het milieu beïnvloedt. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Ik koop liever nieuwe kleding dan tweedehands. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. Ik ben van plan om de komende tijd fast fashion te blijven kopen. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. Ik ben van plan om de komende 6 maanden minder fast fashion te kopen. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. Ik ben bereid om meer te betalen voor duurzame kleding. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. Ik wil meer leren over duurzame mode. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

9. Ik denk na over hoe mijn kledingkeuzes invloed hebben op het milieu. ☐ ☐ ☐ ☐ ☐
10. Ik ben geïnteresseerd in het kopen van tweedehands of gerecyclede kleding. ☐ ☐ ☐ ☐ ☐

Section 3: Reflectie

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

- | | 1 | 2 | 3 | 4 | 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Ik heb iets nieuws geleerd over mode en duurzaamheid. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Ik ben me bewuster van hoe mijn kledingkeuzes invloed hebben op de planeet. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Ik heb iets ontdekt dat ik wil proberen of veranderen. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Ik voel me zekerder om over deze onderwerpen met anderen te praten. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. Ik zou dit spel aanraden aan een vriend of vriendin. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Section 4: System Usability Scale (SUS) – Standard 10 items

Geef aan in hoeverre je het eens bent met de volgende uitspraken (1 = helemaal oneens, 5 = helemaal eens):

- | | 1 | 2 | 3 | 4 | 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Ik denk dat ik dit systeem regelmatig zou willen gebruiken. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Ik vond het systeem onnodig ingewikkeld. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Ik vond het systeem makkelijk te gebruiken. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Ik denk dat ik hulp nodig zou hebben om dit systeem te gebruiken. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. Ik vond dat de verschillende onderdelen goed op elkaar aansloten. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. Ik vond dat er te veel inconsistentie in het systeem zat. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

7. Ik denk dat de meeste mensen het systeem snel zouden leren gebruiken. ☐ ☐ ☐ ☐ ☐
8. Ik vond het systeem onhandig in gebruik. ☐ ☐ ☐ ☐ ☐
9. Ik voelde me zeker tijdens het gebruik van het systeem. ☐ ☐ ☐ ☐ ☐
10. Ik moest veel leren voordat ik ermee aan de slag kon. ☐ ☐ ☐ ☐ ☐

(Sectie 4: Open Vragen)

1. Welk onderdeel van het spel of de website viel je het meest op?
2. Heeft iets je verrast? Zo ja, wat?
3. Heeft het spel veranderd hoe je denkt over kleding of shoppen?
4. Als je één ding zou mogen verbeteren aan de ervaring, wat zou dat zijn?

Appendix I

Rewards

All the reward badges from the website can be found on the following pages.

