PERSUASIVE DESIGN FEATURES AND POTENTIAL CHILD FINANCIAL HARMS – QUALITATIVE RESEARCH JUNE 2025

Discovery

Contents

Foreword by Ofcom

Ofcom has statutory duties to promote and research media literacy. The Online Safety Act 2023 (OSA) clarifies and adds specificity to Ofcom's existing media literacy duties. Amongst other things, it requires Ofcom to build public awareness about a range of media literacy and online safety issues, and to encourage the development and use of technology and systems that provide protection to online users. Our three-year strategy for media literacy sets out how we will exercise our duties prioritising three central elements: Research, Evidence and Evaluation; Engaging Platforms; and People and Partnerships.

As part of our commitment to understanding user expectations, we examined the impact of persuasive design on children. We commissioned this research to support our work in engaging platforms. These platforms play a vital role in fostering media literacy among their audiences. This research explores what parents and children want to see platforms doing to better support media literacy, particularly regarding online spending. Platforms can play a key role in helping their users to make informed financial decisions and maintain control of their finances when on their platforms. Our research investigates persuasive design features related to child spending and potential child financial harms from a media literacy perspective, and draws out the implications for how online platforms can support their users' media literacy.

This report sets out findings and themes from qualitative research with children and parents. It explores the potential link between persuasive features and child financial harms. It sets out children's experiences, attitudes and media literacy, to identify the persuasive platform features or functionalities that may lead to financial harms in children. The research specifically focused on gaming, social media and video sharing platforms, and talked to children and parents who had experienced some kind of potential financial harm[1] or who had concerns about it.

This research draws on views from 62 parents and 105 children and was conducted by Discovery Research. Fieldwork was carried out across the UK, incorporating all four nations, and a mix of urban, suburban and rural locations. The qualitative approach used for this project enables us to hear in detail from children aged 8-16, who are spending money in social or gaming environments. Many social media and some gaming platforms have minimum age requirements for accounts. Some of the children that took part in the research held accounts on these platforms despite not meeting these minimum age thresholds. For the purposes of the research, social media use was still discussed with these children, including discussions on age requirements. Ofcom's Online Nation report estimates that a third (33%) of children aged 8-15 with a social media profile on at least one of the platforms included in their research, have a user/profile age of at least 16. Due to this prevalence, children in our sample were not excluded on the basis of holding a social media account under the age requirement.

This qualitative research forms part of a broader research programme including a quantitative survey conducted in March 2025. This survey investigates children's online spending habits across social sites and apps, video sharing platforms and gaming. The survey examined influencing factors and children's attitudes towards their own spending in these environments, as well as parents' views about their child's spending.

It should be noted that in our qualitative research, participants defined 'financial harm' by identifying the ways in which children are adversely affected when encouraged by persuasive platform features to spend money, rather than using a predefined list of harms. It therefore differs from how Ofcom uses the term in reference to those harms defined in the Online Safety Act. The experiences considered harmful by participants included financial losses, overspending and shifts in children's perceptions of money deemed negative. Additionally, participants highlighted broader negative effects such as feelings of disappointment or regret, as well as the loss of autonomy imposed by parents as a consequence.

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[1] This term was not referenced to participants during recruitment or fieldwork.

Our research does not seek to claim that all children's online spending is inherently harmful. We recognise that children derive many positive experiences from engaging with the online platforms discussed, and that spending online can provide a range of benefits. Our [quantitative survey report](#) sets out the overall scale and nature of children's spending, and this qualitative report provides an understanding of some of the areas of persuasive design that those with experiences of or concerns about online financial harm feel could be addressed.

This research therefore provides us with a qualitative understanding of the persuasive design features encountered by children on social sites / apps and on gaming platforms, and how these can potentially lead to experiences of financial harm. These insights will help inform Ofcom's recommendations to platforms on how they can support their users' media literacy in order to prevent financial harm to children. Ofcom remains committed to further exploring aspects of persuasive design in future work.

Note: Any views shared in this report are the views of participants and not of Discovery or Ofcom.

1 Executive Summary

1.1 Background and Methods

- Discovery was commissioned by Ofcom to carry out a qualitative programme of work exploring experiences of online persuasive design features[2] and potential financial harms amongst children. Key aims were to identify the features or functionalities on platforms and online services that could lead to children experiencing financial harms and to identify whether any of these were concerning to parents or children. A further aim of the research was to explore how parents and children would like platforms[3] to address these.

- The project focused on search, gaming, social media and video sharing platforms, with the selection of participants focussed on those who used these platforms and had experienced some negative financial outcomes from using these platforms.

- This study asked participants to identify their views and any concerns about the consequences of spending online, rather than using a predefined list of 'harms'.

1.2 Findings

- The research identified five key categories of persuasive design features which were specifically related to encouraging spending and potential child financial harm. These categories of features were:

  - **Risk-based:** Involve risking something valuable, or an uncertain outcome. Participants likened these features to gambling. These included mystery rewards, including paid-for rewards, and platforms that visually resembled gambling sites.
  - **Dissociative**: Make it harder for users to stay conscious of what and how much they are spending – for instance by using in-game currency as a proxy instead of displaying actual currency amounts.
  - **Misleading:** Anything where it is unclear what the user is going to get/how much something costs. This included lack of transparency around the purpose or benefit of in-game purchases, as well as misleading features related to social media, such as unclear promotion labelling and misleading or fake reviews.
  - **Impulsive:** Encourage users to make quick, impulsive decisions surrounding spending. For example, time-limited rewards, and lack of clarity around how long offers would be available for.
  - **Social influence:** Exploit and amplify peer pressures that young people may already experience to encourage spending. These included limitless upgrades which encouraged competitive spending, and sharp differences in default and paid-for cosmetic items – making the paid-for versions feel essential.

- Parents and children felt that these features interacted with each other, increasing their individual impact. Parents and older children felt that these also form part of a wider context of persuasive features, which act to keep children continuously engaged on online platforms.

- Parents and children felt that these persuasive features could lead to several different types of harm – both short- and long-term in nature. Parents were particularly conscious of the

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[2] See Section 2.1 for definition.
[3] The type of platforms referenced are gaming, social media and video sharing platforms, which fall under the category of regulated services.

long-term impacts, while children were more focused on short-term impacts. The harms that children identified and reported experiencing as a result of these features in the research included financial harms, such as loss of money or a negative influence on their broader view of money. For example, being able to buy items to improve gameplay promoted the idea that money can buy success. This also potentially contributed to a negative impact on self-esteem, as those who were unable to purchase items reported feeling socially excluded.

- There were also cases where children reported broader consequences from their online spending which included disappointment/regret or experiencing a loss of autonomy due to actions taken by parents to restrict use.

- Parents reported feeling pressure themselves as a result of their children playing games, where their children frequently asked for more money to spend on in-game purchases in order to keep up with peers who had specific cosmetic items or premium accounts.

- In some cases, parents and children were already taking protective steps to guard against the potential impact of persuasive design features, in order to reduce the possibility of resulting harm. These were often reactive – behaviour was modified following an unwanted experience.

- Parental actions tended to focus on either restricting features or opportunities for spending; or on engaging with the platform themselves so that they would be better equipped to guide their child's decision making. Actions taken by children included forms of self-regulation and respecting or modelling parental behaviours.

- Although still at risk of some financial harms, the youngest children (8-11) were often protected to at least some extent by parents. Parental measures for younger children included specific rules around screen time and platform usage, personally overseeing all in-app transactions and controlling purchases by using their own payment card. Meanwhile, the experiences and behaviours reported by the oldest teens (15-16), suggested that media literacy had grown with age and had often learned from experiences in their younger years. This age group showed a higher level of awareness of several of the persuasive features, however, in the case of social influence features, this awareness didn't necessarily prevent them from having an effect.

- The early secondary school age group (11-13) were identified in the research as the most vulnerable age group. Levels of digital exposure and engagement increased considerably at this age compared to younger children, while parental oversight also began to decrease. The following factors were identified throughout the research as contributing to vulnerability at this age:

    o **Access to smartphones:** By the age of 11, all the participants had access to smartphones. There were also many examples of children using social media under the age of 13 – bypassing age verification processes.

    o **Transition to secondary school**: New social and academic pressures coincide with more physical freedom and independence.

    o **Key development stage**: Parents noted that this adolescent period is a key stage where children are in the process of discovering their identity and beginning to develop critical thinking skills.

    o **Peer pressure:** The increasing influence of friends, compared to family, makes children more susceptible to peer pressure.

    o **Increased financial autonomy:** At 11, children can access their first debit card, granting them more financial independence. This was demonstrated amongst

teenage participants – who all had received first debit cards between age of 11 and 13. There was evidence of some within this age group, as well as slightly older teenagers who had signed up for 18+ subscriptions using their own debit cards.

- Parents and children generated a range of solutions that they'd like platforms to introduce. Different solutions were felt to be appropriate depending on the type of feature, how harmful it was deemed to be and the age group at risk of exposure.

    o **Restrictive solutions** were based on removal or restriction of certain features – and were felt to be particularly suitable for **risk-based** and social influence features. Examples included spending caps that could be controlled by parents, and offering gaming modes for children, where all purchase features were switched off. Parents noted that the effectiveness of age-based restrictions was dependent on the effectiveness of age verification processes.

    o **Balancing solutions** were based on counteracting or reducing the impact of certain features – and were felt to be suitable to target **dissociative** and **impulse activating** features. Examples included features that increased the number of steps and time involved in a purchase – thereby giving the user more time to think about it. In addition, solutions that drew attention to the actual cost of transactions were suggested to address issues with in-game currencies.

    o **Empowering solutions** were based on giving users tools to manage certain features – and were considered appropriate to target **misleading** features. These were largely based around improving media literacy and ensuring that users were able to make well informed decisions about the purchases they were making.

- In addition to the solutions focussed specifically on targeting persuasive design features which encourage spending, participants also identified a role for broader interventions to address persuasive design more generally. These interventions focused on two specific areas – the time children spend on platforms, and the advertising which is targeted at them.

2 Background and Methods

2.1 A note on the terminology used throughout this report

- **Children:** This refers to anyone under the age of 18. In relation to the participants, this includes primary school age children, aged 8-11, and secondary school age children aged 11-16[4]. Unless otherwise specified, *younger children* refers to primary school aged children (8-11), *older children refers to those at secondary school (11-16)* and *older teens* refers to those aged 15-16.
- **Persuasive design/features:** This refers to design features on a platform that aim to influence user behaviour.
    - o Examples of such behaviour include making a purchase, signing up for a service, or increasing engagement.
    - o This study focused primarily on persuasive design that aims to influence financial behaviours – although there is some overlap with features that influence general engagement.
- **Child financial harms:** This study asked participants to identify their views and any concerns about the consequences of spending online, rather than using a predefined list of 'harms'.
    - o The experiences identified and considered by participants to be harmful were; disappointment/regret, loss of money, loss of autonomy and impacts on broader views around money.

All primary evidence such as quotations referenced within this report, relate to this study unless otherwise indicated.

2.2 Background

Ofcom has statutory duties to promote and research media literacy. The Online Safety Act 2023 (OSA) clarifies and adds specificity to Ofcom's existing media literacy duties. Amongst other things, it requires Ofcom to build public awareness about a range of media literacy and online safety issues, and to encourage the development and use of technology and systems that provide protection to online users.

As part of Ofcom's commitment to understanding user expectations, set out in its three-year strategy for media literacy, this research was commissioned to examine the impact of persuasive design on children, and specifically how this relates to child financial harms.

This qualitative work was completed by Discovery Research, building on emerging evidence and findings from Ofcom's research on children's media literacy. Ofcom intends to use this research as a foundation for engaging with online platforms on these issues.

The overarching aim was to build understanding of how persuasive features online can lead to negative financial outcomes for children using these platforms. A secondary aim was to explore

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[4] Please note that there is an overlap with some 11 year olds included in the younger sample and some in the older – depending on whether they were at primary or secondary school.

potential solutions, as well as generating and exploring with parents, including what platforms themselves can do to mitigate against these potential harms.

This can be split into three key objectives:

- **Understanding the wider context where children may be exposed to online financial harm:**
    - How children interact online and where/how they spend money
    - Where children are experiencing financial harm online
    - What these harms are and wider factors leading to financial harms
- **Exploring design features that are most concerning for children and parents, in terms of financial harms:**
    - Understanding the persuasive design features that lead to financial harm – including how they lead to harm, and what these harms are.
- **Generating potential solutions to prevent children from financial harm – especially regarding persuasive design:**
    - Uncovering what parents and children want platforms to do about persuasive features.
    - Generate parents' ideas and suggestions about what social media, search, video-sharing and gaming services could do to support users' media literacy.

2.3 Methods

The qualitative study consisted of a scoping phase to inform the research design, and a main stage comprising the majority of fieldwork. There were three key audiences, with methods adapted to their age and experience. These audiences were: younger children (Primary 8-11), older children (secondary 11-16), and parents. Across the scoping and main stage, the research brought together views from 62 parents and 105 children. Fieldwork was carried out across the UK, incorporating all four nations, and a mix of urban, suburban and rural locations. Fieldwork took place during December 2024 – January 2025.

2.3.1 Scoping phase

The scoping phase consisted of desk research and face to face focus groups in schools. The desk research involved a review of existing data around child financial harms and persuasive design, to help feed into the design of guides.[5] In-school scoping sessions comprised two sessions in different secondary schools to explore general behaviours and spending online, and to sense check that language around harm was clearly understood by the children. Each session included six pupils and was run as an hour-long workshop. One session was with year 7 pupils (aged 11-12) and the other with year 10 (14-15). This meant that we could capture a range of perceptions and experiences across different age groups. Both sessions were mixed gender.

2.3.2 Main stage fieldwork

The main stage of fieldwork comprised a series of 23 face-to-face focus groups, with parents, secondary school children (age 12-16) and primary school children (age 8-11), conducted across the UK (see Figure 1 below). All participants were asked to complete a pre-task ahead of the group session. This comprised a short, written task to introduce the subject matter and invite participants to reflect on their relevant experiences. This was adapted for the different audiences.

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[5] A list of sources consulted for the desk review is included in the appendix.

2.3.3 Sample

Fieldwork was carried out across the UK, with fieldwork with each participant type replicated across all four nations, and encompassed a mix of urban, suburban and rural locations.

The main stage fieldwork comprised:

- Eight face-to-face groups with parents (six-eight participants per group, 62 participants in total)
- 11 face-to-face groups with secondary school age children (split by school year and gender), conducted in school (six-ten participants per group, 77 participants in total)
- Four face-to-face groups with primary school aged children (aged 8-11), conducted in home (four participants per group, 16 participants in total).

Figure 1 provides an overview of the sample in each group. A more detailed breakdown is included in the appendix.

Figure 1: overview of sample

Audience	Length of group	Number of groups	Locations
Parents	2 hours	8 *(6-8 participants per group, 62 participants in total)*	2 in England 2 in Scotland 2 in Wales 2 in Northern Ireland
Older children *(aged 12-16 with groups split by gender and year group)*	1 hour	11 *(6-10 participants per groups, 77 participants in total)*	5 in England 2 in Scotland 2 in Wales 2 in Northern Ireland
Younger children *(aged 8-11)*	1 hour	4 *(4 participants per group, 16 participants in total)*	1 in England 1 in Scotland 1 in Wales 1 in Northern Ireland

When considering these findings, it is important to bear in mind what a qualitative sample and approach provides. It explores the range of attitudes and opinions of participants in detail. Unlike quantitative research, it provides an insight into the contexts and the drivers underlying participants' views. Qualitative samples use specific recruitment criteria (detailed below). Findings are descriptive and illustrative, and not statistically representative.

The key considerations for sample design were:

- **Age of child**: children's ages represented the breadth of school year age within each group to ensure representation of each school year within scope. The parent groups were split by parents with children of varying ages.
- **Experiences of platforms and financial harm**: given the nature of the study, it was important to focus on participants with relevant exposure/experiences. Therefore, children were screened to ensure that they were users of gaming and/or social media platforms, and that they had experience of spending money with these. They also had varying levels of media literacy and needed to have had some kind of experiences which could constitute online financial harm. Likewise, parents were of children who used relevant platforms, and whose

children had either experienced financial harm, or this was something the parents were concerned about occurring.

- **Diversity**: Across the sample, we included a range of ethnicity and socio-economic backgrounds (measured by household socio-economic group for parents and younger children; for the schools groups, we did not capture household level data about the individual participants. However, we sampled schools with varying levels of affluence and deprivation in order to achieve a spread of socio-economic situations).
- **Gender**: for parents, we had mixed gender groups, to include both mums and dads of children. For the older children, groups were split by gender, so half the groups comprised female identifying participants; the other half comprised male identifying participants. For younger children, the research sessions comprised of existing friendship groups, so in some cases there was a gender split while others were mixed.

3 Findings

3.1 Contextual factors

3.1.1 Overall platform engagement and impacts of broader persuasive design

The fieldwork explored the various activities that children were doing online, and the range of platforms that they were accessing. There were three key areas where children were spending money online: gaming, social media (through affiliate links[6]), and shopping apps or sites. Persuasive features in social media, search, video-sharing and gaming services were the priority focus for this research.

Gaming was a popular activity across the sample – for younger children, gaming was fairly consistent across gender, while as age increased, gaming started to become more commonly referenced by boys. Examples of popular gaming platforms were Roblox, Fortnite, and FC24/FC25, as well as Block Blast and Minecraft. While this was a qualitative sample, and therefore not representative, these findings reflect wider research including the latest CHILDWISE Playground Buzz Report (Autumn 2024), which identifies Roblox, Fortnite and FC24/25 as the most popular mobile and console gaming platforms for 7-12 year olds, and the most popular console gaming platforms for 13-17 year olds[7].

In terms of social media, the main platforms being used – and where money was being spent – were TikTok and Snapchat. These were referenced across the sample, but particularly by secondary school aged girls. Once again, this is consistent with findings of the latest CHILDWISE Playground Buzz Report (Autumn 2024), which identifies TikTok and Snapchat as the top two social media platforms for 13-17 year olds, with popularity at its highest amongst girls.

When shopping online, the children showed a clear preference for online-only shopping apps (such as Shein and Temu), rather than traditional high street shops that also sell online via an app or website. Although shopping apps were not a key focus of this research, it is of note that these apps used similar persuasive features to those identified on gaming and social media platforms. In this way, shopping apps were also perceived by some participants as contributing to the overall context of an online environment which felt addictive.

Children and parents perceived persuasive features related to financial harm as operating within a broader persuasive environment. Participants identified a number of ways in which the online world, and specifically the platforms that children engage with, can draw them in, and can feel all-consuming. All but some of the youngest children were conscious that online activities could feel addictive, with this perception increasing with age. Older children, particularly teens frequently reported either trying to limit their own screen time or feeling like this is something they should do. These perceptions reflect the findings of Ofcom's Children and Parents Media Use and Attitudes 2024 report, which found that a third (33%) of 8-17's feel that their own screentime is too high – with this figure rising amongst older teens.[8]

Participants identified several factors which contribute to the allure of online platforms – particularly by blurring the boundaries between online and offline life.

- **Platforms that can be accessed on multiple devices, from anywhere** – this can make it very difficult for children to switch off from what they have been doing online, or at times, to fully engage with the offline world.

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[6] This is where content creators share shopping links on social media and receive a commission for purchases made through these links.
[7] Source: CHILDWISE Playground Buzz Report (Autumn 2024)
[8] Source: Ofcom Parents' and Children's Online Behaviours and Attitudes 2024, Table 63

- **Friendships and social interactions can be dependent on online presence** – making children feel somewhat dependent on their online platforms, to support their social lives. This can also play into peer pressure and fear of missing out (FOMO), especially if friends might be online together when they aren't.
- **Immersive games that blur the boundary between real life and online worlds** – with games increasingly based on complex online worlds, and a focus on personalised avatars to express individuality – online identities can quickly become blurred with offline identities.

While these factors were felt to be instrumental in pushing children towards platforms, participants also identified other factors which act to keep them engaged, and to encourage more continuous platform engagement.

- **Games that never end** – many online games are continuous in nature – meaning that there is no clear end point, or obvious time to pause. Children can struggle to override the impulse to just keep playing.
- **Rewards for being on platforms longer and more frequently** – making the impulse to keep going even stronger and directly encouraging more continuous engagement.

Targeted ads that follow users across different platforms – maintaining awareness of a service, site or game by repeated advertising across the platforms they are using.

These persuasive features can encourage continuous platform engagement and can influence children's financial behaviours. They did this in two ways:

1. By increasing the time spent online, they increased the opportunity for children to be exposed to features that influence financial behaviours.

2. By using impulse activating features to encourage continuous engagement, they appeared to have become normalised by children, who generally accepted them as part of the online platforms they encountered. Some of the children were able to identify that these features had influenced their spending behaviour in the past.

3.1.2 Key Stage of Vulnerability

Parents and children identified early secondary school age (11-13) as a key stage where young people could be more vulnerable to the potentially harmful effects of persuasive features. During this period, levels of digital engagement amongst children increased rapidly. However, parents (plus a few older children in the sample) stated that children's understanding and media literacy was not able to match this speed. At the same time, parental oversight began to ease off, weakening the safety net that parents often provided to their children at a younger age. This heightened risk of vulnerability was felt to be driven by a combination of the following factors.

- **Access to smartphones:** By the age of 11, all of our participants had access to smartphones – this reflects Ofcom research which shows that access to smartphones becomes almost universal by age 11 (90%)[9]. The use of mobile phones to go online increases significantly when children reach 11, and even more so between the ages of 11-13 (from 64%-90% between ages 10-11, and then up to 97% by age 13).

- **Transition to secondary school**: New social and academic pressures coincide with more physical freedom and independence.

- **Key development stage**: Parents noted that this adolescent period is a key stage where children are in the process of discovering their identity and beginning to develop critical thinking skills.

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[9] Source: Ofcom Children and Parents Media Literacy (October - November 2024), Table 9

"My brother spent money on my parent's card, and they made him pay it all back. I feel like when you're younger, you don't really know the concept of money and how much it's worth. Until it's your money, I don't think you really know." Year 11 pupil

Moreover, parents and older teenagers noted that younger children had under-developed impulse control. They felt that this makes them more vulnerable to persuasive content – such as limited time offers and highly engaging in-app purchases. As a result, they may be far more susceptible to impulsive spending without consideration for the wider financial implications.

"{My brother is} 10. As soon as my mum put a voucher on, he spent it all straight away. And she was like, 'You should wait and see if there's something you actually want', but because all his friends are there saying, 'Oh yeah, I brought this, I brought that', so he's like, quickly buying something straight away" Year 9 pupil

This observation reflects wider studies into child development – for instance, the Child Development Institute identifies the age between 9-12 as the typical stage that children start to understand the value of money and start to apply critical thinking such as drawing conclusions from observation.[10]

- **Peer Pressure:** The increasing influence of friends compared to family makes children more susceptible to peer pressure. Children were easily swayed by trends and the purchasing behaviour of their friends. The pressure to keep up with the latest trends can lead them to make purchasing decisions that are primarily focused on fitting in or trying to gain social acceptance. This overriding desire to conform makes them far more susceptible to persuasive marketing tactics.

  "We felt really nervous when our older one now started playing, and it was because another friend was kind of opening up other elements and sort of bringing them in. And this, you know, it's really hard to police it." Parent of teenagers

- **Increased financial autonomy:** At 11, children can access their first debit card, granting them more financial independence. This was demonstrated amongst teenage participants – who all had received first debit cards between age of 11 and 13.

3.2 Types of financial harms

3.2.1 Overview of harms

Online Child Financial Harm broadly refers to financial exploitation, manipulation, or practices that negatively impact children's financial or general well-being. In order to identify specific examples of harm, participants described what they perceived to be harmful, and explored how features might play a role, rather than using a predefined list of harms. We also looked at some of the consequences of these harms. As a result, the harms discussed in this report do not constitute a comprehensive set of all possible harms – rather, they reflect what participants told us within the qualitative research.

Using this approach, the study identified a range of self-reported/potential harms, which may affect children both immediately, and longer term.

Disappointment or regret

This was a type of harm frequently raised by children and parents alike and was associated with all of the categories of persuasive features that emerged. There was disappointment as a result of misleading and risk-based features, where purchases had not been what the individual had expected or wanted. There was also regret and disappointment where impulsive and dissociative features had led to purchases being rushed or not well thought out. Likewise, social influence-related features also

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[10] Source: Child Development Institute. Ages & Stages Of Child Development | Birth - Teen | Questionnaire, Progress, Charts

encouraged spending which led to regret, as decision making had been rushed and not balanced. Some older teenagers discussed spending that they had regretted when younger – this included spending on cosmetic upgrades, which they had felt under pressure to have. This included items like skins which are bought purely for aesthetic purposes. Older children reported avoiding the 'default skin' because it makes them look 'inexperienced'. In retrospect, teenagers acknowledged that they were often embarrassed to admit their regret at the time.

> *"I probably would [buy cosmetic items in a game] if I was younger. I mean, I'm quite hard now but probably a couple years back, I would have bought it, like just not even thinking, right? And just at the time wanting it, but then later on thinking it's just a waste." Year 9 pupil*

Loss of money

Loss of money included instances where participants had spent more than they intended to, often due to dissociative or misleading features, which had resulted in them lacking clarity about exact costs. In some cases, participants had also lost money as a result of signing up to ongoing financial commitments, without being aware of the longer term implications of the subscription. For example, some participants had subscribed to a premium version of an app, with an introductory offer, without realising that the price would increase over time, and had thereby spent more than they wanted to. One teenager had subscribed to a premium version of an app without realising how much it would cost longer term. Once she realised the cost, she was too embarrassed to ask a parent or other adult whether or how she could cancel the subscription. Instead, she paid for it for the full year, until it reached its end.

Generally, participants referred to individual transactions typically being for small amounts, but there was acknowledgement that these added up over time. Parents reported incidences where their child had lost them money through accidental spending on a card that was linked to the platform. While the individual amounts of money lost this way tended to be quite small, there were some examples where children had accidentally spent larger amounts.

Erosion of autonomy

Erosion of autonomy occurred where children exhibited a lack of awareness of the persuasive features, or lack of awareness or understanding of the amount that they were spending. This affected children across the age groups. Primary school aged children were affected because they were more trusting of platforms and less likely to question the design of features. But this also posed an issue for older children. Older children tended to display better media literacy so if they were coming across a persuasive feature for the first time, they were more likely to notice and understand it. However, if they had already been using the platforms from a younger age, they were so used to the persuasive features that they didn't notice or question them.

Normalisation of gambling-like features

Risk based features were felt to encourage riskier financial behaviour – particularly in terms of encouraging gambling. Parents felt that repeated exposure to these features meant that children were so used to them that they didn't even question them. This was also reflected in discussions with children who sometimes accepted a degree of risk as simply an inevitable part of a game. For instance, they simply accepted not knowing exactly what they would receive when buying a mystery bundle.

Likewise, parents expressed concern that even risk-based features which did not involve money still replicated the emotions of taking a chance to win. They felt that normalising these emotional experiences, meant that it was only a small step to gambling or other financially risky behaviour in the future.

Impact on broader views around money

Parents in particular, drew a link between the persuasive design of platforms, and children's view around money more broadly. This was of specific concern because it was perceived to be a way in which the impact of persuasive design could have a long-term, harmful impact, going beyond the immediate effect on finances and impacting perceptions of identity, achievement, friendship, success, and self-esteem. Parents identified the following as specific potentially harmful impacts:

- Being able to pay for likes or followers, sends a message that popularity can be bought – linking self-esteem to money.
- Being able to pay to skip game levels, sends a message that money is more important than skill or hard work.
- The overall nature of addictive design features – Parents felt that these encouraged and normalised addictive behaviours more broadly.

"I feel all these things have an effect, where they look at money like, this is what you need in order to be happy. The more money you have, the more happiness or more enjoyment of things you're going to have. So definitely it has an impact on how they look at things" Parent of teenagers

3.3 An overview of persuasive features related to financial harm

3.3.1 Overview of features

The persuasive features that lead to harm, identified by participants, split into five broad categories. However, these categories are rarely distinct and often overlap. The combined effects have the potential to create more opportunities for children to be negatively affected and could be even more problematic. These categories of features were:

- **Risk-based:** Involve risking something valuable, or an uncertain outcome. Participants likened these features to gambling.
- **Dissociative:** Make it harder for users to stay conscious of what and how much they are spending – for instance by using in-game currency as a proxy instead of displaying actual currency amounts. In doing so, they serve to widen the cognitive distance between the activity and the specific act of spending money.
- **Misleading:** Anything where it is unclear what the user is going to get/how much something costs, as well as ongoing costs beyond the initial purchase.
- **Impulse activating:** Encourage users to make quick, impulsive decisions – thereby discouraging users from weighing up the relative pros and cons.
- **Social influence:** Exploit and amplify peer pressures that young people may already experience.

Figure 2: An overview of persuasive feature categories

Risk-based features
Involve risking something valuable, or an uncertain outcome, participants likened these features to gambling.

Dissociative features
Serve to widen the cognitive distance between the activity and spending money.

Misleading features
Anything where it is unclear what you are going to get/how much something costs

Social influence features
Exploit and amplify peer pressures that young people may already experience

Impulse activating features
Encourage users to make quick, impulsive decisions

3.4 Categories of persuasive features discussed in more detail

Figure 3: Summary of persuasive features by category

Risk-based features	Dissociative features	Misleading features	Social influence features	Impulse activating features
Paid-for mystery rewards	Lack of clarity around value of in-game currencies	Drip pricing features	Pay-to-win mechanics	Limited availability or time limited offers
Mystery rewards (not paid for)	Bundled packages of in-game currencies	Misleading/fake reviews	Limitless upgrades encouraging competitive spending	Lack of clarity around how long items will be available for
Visually mimicking gambling sites		Unclear/ easily missed paid promotion labelling	Paid for cosmetic items clearly distinct from (better than) defaults	Time limited rewards to encourage continuous play
		Confusing subscriptions		
		Lack of transparency about cosmetic vs. gameplay features	Loss aversion - Paid-for features (e.g. reinstating streaks) that play into fear of missing out	
		Unclear value propositions		
		Artificial discounts		

3.4.1 Risk-based features

Risk-based features involve the possibility of risking something valuable or facing an uncertain outcome and were most referenced on gaming platforms. The inherent unpredictability and potential for risk and reward associated with these features led parents to perceive these features as closely resembling the elements of chance found in gambling.

Some older teenagers recognised the potential harm of features that encourage risk taking and addictive behaviours. However, the strongest concern - and in some cases, shock that such features even exist - was raised by parents, who felt that risk-based features could lead to significant negative outcomes for their children, both in the short and long term.

When it comes to risk-based features parents expressed a clear hierarchy of concern, with features that they felt directly mimicked gambling the most concerning. This hierarchy of concern has three distinct layers:

1. **Paid-for mystery rewards**, such as player packs and loot boxes were viewed by parents as the most concerning and potentially damaging features, seen to most closely resemble gambling. Parents expressed concern that these features could foster addictive behaviours and expose their children to significant financial risks as the allure of winning something valuable can be hard to resist for children and young people, leading to repeated attempts and escalating costs.

   Children indicated that direct experience with paid-for mystery rewards was limited, and there was awareness that some platforms were moving away from these features. However, they still recognised the dangers associated with these features that pose uncertain outcomes. Nevertheless, children's primary concerns revolved around the short-term potential loss rather than the potential long-term consequences. Children described these

features as 'risky' and 'not guaranteed,' acknowledging that there's no certainty, which could lead to disappointment and regret about money spent.

2. **Mystery rewards that aren't paid for, or where part of the reward is often a surprise**. These features, such as randomised rewards, mystery rewards, or "spin the wheel" mechanics, were seen frequently by children. Children viewed them as integral to the games they play, and it was clear that these features had been normalised for those we spoke to. For parents these features were less concerning than paid-for features, as they did not pose an immediate financial risk. But concerns remained in terms of long-term impacts as the features echoed emotions associated with gambling. Parents voiced concerns around the potential for these features to encourage addictive behaviours. In contrast children were primarily driven by the immediate thrill and the prospect of earning rewards. They acknowledged the risks as merely 'frustrating' and had difficulty recognising any significant long-term consequences, as they believed they 'weren't losing any real money'. A few children stated that if they won something that they wanted, they would be tempted to stay on the platform for longer in order to use the reward that they had won.

3. **Platforms that visually resemble gambling**, with bright graphics, pop ups and slot machine visuals raised concerns for parents – although not as alarming as those that involved actual exchange of money. Parents expressed concern when it came to the potential psychological impact on their children, communicating that exposure to gambling-like mechanics, even in a playful context, could encourage and normalise gambling behaviour and most notably desensitise young people to the risks associated with real gambling.

   However, these concerns were not directly noted by children. Instead, children tended to view these features as harmless fun that was at most 'annoying' in trying to grab their attention or distract them. These features were again accepted as an integral aspect of the online experience, with the visual resemblance to gambling not triggering the same level of alarm among young people, as it did among parents.

3.4.2 How can risk-based features lead to financial harm?

This research suggests that risk-based features have the potential double effect of both immediate financial harm, and longer-term damage in terms of normalising risk taking and addictive behaviours.

The research identified 3 main ways that risk-based features could lead to harm:

1. **In-game purchases which introduce elements of chance and surprise, lack transparency and fairness, can encourage gambling-like behaviour.**
   By encouraging risk-taking behaviours, these purchases can promote repeated spending. In many cases participants reported platforms not disclosing the exact odds of obtaining rare items, exacerbating the issue further. And even where the odds were disclosed, they were not necessarily displayed in a way that children fully understood. This lack of transparency led to players, particularly early secondary school aged children (11-13), becoming caught in a cycle of spending in the hope of obtaining rare and valuable items.

   "You could spend £20 to buy a player pack, you don't know what you're going to get…it's terrible because it's not guaranteed. You could spend 3000 points but get a bronze card." - Year 9 pupil

   "There's loads of stuff in each game, like in police games there's police specialist packs but it doesn't tell you what's in it, so I bought it for 1000 [points?], but I only got one rubbish thing." - Year 9 pupil

2. **Some children, especially older teenagers, acknowledged that the excitement lies more in the thrill of the purchase than in the product itself.**
   Once they obtain the item, they quickly start thinking about their next acquisition.

"My brother is horrendous for it, because he's always, ever since he was little, he bought his first thing at like eight, and my parents put their card on the platform, and he's just checked it a few months ago, and found hundreds of pounds worth of stuff that he's just bought. He loves the dopamine rush, so he just buys it, and buys it, and buys it." - Year 11 pupil

Parents and some of the oldest children expressed concern that this behaviour could become a gateway to gambling, as young people chase the "purchase high," which encourages continued engagement and spending. The cycle of buying and seeking the next thrill creates an environment where impulsive behaviour and risk-taking are reinforced.

As a result, it was perceived by parents and some children, that this pattern may lead to habitual spending and potentially foster risk-taking behaviours among young people. Children across age groups expressed some awareness that these design features could be manipulative and encourage impulsive spending, but often this was not enough to override the allure of the purchase. There was more evidence of the oldest teens resisting such purchases, but this was typically a behaviour developed following previous overspending.

"If you get something you want, you want to keep playing coz otherwise you'll lose it. But if you get something you don't want you want to play again to get back to the wheel for another chance." - Year 6 pupil

"They release certain new black ice skins for your guns – they're cool and rare. So, it persuaded me to get them, but it's like 1% [chance] of getting it but I really want it, so I might as well try opening the packs" - Year 9 pupil

3. **Bright visuals, captivating sounds, and engaging animations mimic a casino-like environment.**
   Parents observed that platforms that visually resemble online gambling were particularly enticing to younger children. For example, they spoke about visuals which reference winning, or depictions of coins. However, children did not always recognise the parallel between these elements and actual gambling, during the focus groups.

   "I'm sure all of our kids play these games where they're free games, and an advert pops up and it's spin to win. You know, they're not actually winning any money, but they're winning coins, it's mimicking online gambling. I remember when my son was five and he was, like, spin, spin, spin, spin." - Parent of teenagers and younger children

   "Where kids who start [using online platforms] quite young, become teenagers, I think that the behaviour has already been formed over those years - that addictive craving is already there. I think that's where the worry is." – Parent of teenagers

3.4.3 Dissociative features
Dissociative features make it harder for users to stay conscious of what and how much they are spending. When it comes to online spending, both parents and children noted a significant sense of disconnection between the value of money being spent and the benefit received. This was especially the case when compared to physical purchases, which by their very nature feel more real and tangible. Parents noted that this is already a challenge that they face when teaching their children to be financially literate, in an increasingly digital world. Dissociative features make it even harder for users to stay conscious of what and how much they are spending – for instance by using in-game currency as a proxy instead of displaying actual currency amounts. This further amplifies the disconnect, widening the cognitive distance between spending and receiving even more.

In-game currencies

In-game currencies often lack transparency when it comes to their monetary equivalence. The conversion rates were especially confusing for younger children in primary school. These children were still getting used to navigating spending, and calculating how much money they had, even when using standard currency. In some cases, they were more used to using cash for in-person purchasing, and were still learning how this translates into virtual transactions online. The introduction of an additional currency added a further layer of complexity. Younger children were often unaware of this disconnect – for instance, they would state confidently that they knew the cost of an item, but when probed, they referenced the amount in in-game currency and struggled to state what the equivalent GBP was. This was seen particularly among younger primary school aged children, with concern raised by parents that in-game currencies were limiting their children's opportunities to learn about money.

Bundled currency packages

Bundled currency packages where in-game currencies have to be purchased in certain pre-defined amounts further aggravate the issues caused by in-game currencies. Much like in-game currencies, they are often unavoidable, being commonly offered by platforms as the only way to purchase currency. Children frequently reported that the available bundle amounts rarely aligned with the purchase of a single item. Parents expressed concern that bundled currency packages can further complicate their children's understanding of the extent of their online spending.

> *"You can buy 1700 and 2200, whereas you can't buy a round number like 1500. It's difficult comparing how much you've actually spent between the two, because they're completely different - like 1700 and 2200, you don't actually know how much you've spent." – Year 5 pupil*

3.4.4 How can dissociative features lead to financial harm?
There are 3 main ways that dissociative features could potentially lead to harm:

1. **The lack of transparency and complexity of in-game currencies and bundled currency packages can cause confusion for those purchasing them (i.e. parents) and those spending them (i.e. children).**
   By utilising features such as in-game currency, it is possible that gaming platforms are affecting perceptions of both value and cost, reducing the child's ability to make informed financial choices. In particular, younger children may be oblivious to the real cost of what they are purchasing.

2. **The lack of awareness caused by dissociative features can contribute to impulsive spending and a distorted understanding of financial value**.
   This can also contribute to overspending, as children struggle to keep track of exactly what they are spending in each transaction. For example, a few children reflected on the times that they had purchased several currency bundles during game play, and after the session had realised that they had spent more than they had intended to.

3. **In some cases, dissociative features mean that there is a time delay between spending the money and receiving the item – which can result in children struggling to fully link the action and the consequence.**
   For instance, where a child has purchased in-game currency as an initial transaction, and then spends that currency at a later time in a second transaction. In these instances, by the time the child was making the second transaction, they were no longer as conscious of the real money equivalent that had been spent in the first transaction.

3.4.5 Misleading features

Misleading features are those which make it unclear what the purchaser is going to get, or how much an online purchase will cost. Parents and children alike described these features as prevalent on both social media and shopping platforms, as well as within gaming environments. However, the specific features and the harm they can cause was seen to vary significantly across these two different contexts. For this reason, these environments have been discussed separately below.

In many cases, young people were not aware of misleading features impacting their ability to make informed decisions at the time. Awareness of these features is often reactive, and participants tend to demonstrate awareness of these features after having had a bad experience.

3.4.6 Misleading features - social media and shopping platforms

These features can make it difficult for young people to make informed decisions, leading to potential financial stress and eroded trust in certain platforms. Whilst referenced and discussed across the sample, these features were most referenced in the research by girls who were more likely to be engaging with content creators and their product recommendations. There were many examples of children using social media platforms, under the age of 13 – bypassing age verification processes.

Drip pricing structures

Drip pricing refers to where an initial headline price is advertised at the start of the purchase process, which then increases as the buyer goes through the process, with incremental disclosure of additional fees. Drip pricing is well documented in other sectors, for example retail or transport where all charges must be included in advertised prices[11].

Children noted that on some social media links that they clicked on intending to make a purchase, they were then faced with additional fees at the checkout that they had not expected (e.g., postage or adding taxes). Younger children frequently referred to these additional costs as 'scams', often having not anticipated them at all. In many cases postage / additional fees were considered scams because they were seen as disproportionately expensive compared to the product being purchased. Both parents and children felt that some platforms were more notorious for their drip pricing than others, with parents sharing that even they had been caught out by unexpected additional fees in the past, raising concerns about how their children could spot these fees if the parents couldn't themselves. In examples given by children within this research, older children reported not continuing with the purchase but feeling distrust of the platform or that they would try to cancel the purchase afterwards, which caused them to experience stress.

Unclear or easily missed paid promotion labelling

Primary school aged children were susceptible to paid promotions on social media as they often lacked awareness of how to identify where influencers or content creators were promoting items as a paid advertisement, rather than simply a part of their lifestyle. Parents were particularly concerned about the impact of influencers on social media platforms, expressing how easily their children could be swayed by trusted influencers, often without realising that the content may be a paid promotion.

> *"There is no way to know if someone is being paid to sell a product to you, but I know who I can trust, if they have a big following... They wouldn't be so popular if they weren't trustworthy, so you know they are telling the truth if they do [have a big following]" – Year 5 pupil*

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[11] Source: Competition and Markets Authority (CMA). Estimating the prevalence and impact of drip pricing - GOV.UK

Scams, unclear value exchanges and fake reviews

Scams, unclear value exchanges and fake reviews were referenced throughout the research. Children described:

- Social media posts and advertisement links leading to fraudulent websites posing as legitimate shops
- Unclear value exchanges offering free or heavily discounted products. Participants felt that these were often too good to be true
- Reviews that were described as 'obviously fake', to entice young people to make a purchase. Participants described having to pick up on subtle hints or signs that something is 'off', often with very little clarity on whether something is legitimate or not.

   "I got a little thing in the bottom right corner. I clicked on it, and you know like the free wheels that spin? It says like, bingo, or whatever it was, 'prize draw' and I won a £200 gift card. And it was actually real, but I looked in the terms of conditions, and it said that you had to make a video with the thing that you bought. And if you didn't, then you'd be in a lot of trouble and probably have to pay it back and some more. So, if I was to use that, I would have made like a video saying, you should use this product that I'm buying. That's really misleading." - Year 11 pupil

Confusing subscription models

Confusing subscription models, that blur the line between free and paid content, made it difficult for young people to fully understand what they are signing up for. These models often presented themselves as free or low-cost initially, but once the young person subscribed, they were met with unexpected charges and recurring costs.

3.4.7 How can misleading features lead to financial harm? - Social media and shopping platforms

There are 4 main ways that misleading features can potentially lead to financial harm on social media and shopping platforms:

1. **Drip pricing structures lead to unexpected expenses, often resulting in children only realising the full cost after they have already committed to a purchase.**
   This can be especially problematic when additional fees, such as shipping and taxes, are not clearly disclosed upfront and appear out of proportion for the product being purchased. As a result, children described feeling deceived and frustrated, ultimately undermining their trust in certain shopping platforms and wary of future online purchases.

2. **Scams, unclear value exchanges and fake reviews, exploit young people's trust and lack of media literacy.**
   These practices can contribute to poor purchasing decisions, financial loss and an overall erosion of trust in their ability to shop online. However, young people described that as they gain more experience with online shopping, their awareness and vigilance also increase. This makes them more adept at spotting and avoiding such scams.

3. **Confusing subscription models can trap younger users into ongoing financial commitments that they do not fully understand or need.**
   This can be particularly problematic for primary and early secondary school users who may not have a clear understanding of what they are signing up for or how to manage their subscriptions effectively. In some cases, they had signed up using a parent or family member's account or payment details, leaving them with little to no control when it came to managing or cancelling the subscription. Some teenagers had signed up with their own account details, ticking the box to say they were over 18, and thereby bypassing age

restrictions. This meant that it was their own money which they lost. In at least one instance the child had purposely not told their parents due to feeling embarrassed[12].

4. Unclear or easily missed paid promotion labelling can lead to misguided perceptions and decisions, especially among primary school-aged children who may be less aware of advertisements more generally.

These children often relied on popularity as an indicator of trustworthiness, making them more susceptible to being misled by paid promotions that are not clearly labelled. This on occasion led to uninformed decision making and skewed perceptions of the products being advertised.

3.4.8 Misleading features - gaming platforms

Misleading features were reported to be common across a wide range of gaming platforms.

Ambiguity around cosmetic features versus gameplay enhancements

Participants described a lack of transparency around the distinction between purely cosmetic features which alter the appearance of characters or items, and gameplay features that also improve gameplay. There were also cases when young players described not fully trusting claims that features are purely cosmetic, especially when they observed other players with these features succeeding around them. Parents suggested that this was a deliberate tactic by platforms, to make it seem as though cosmetic features influenced gameplay.

> "They want you to think that you need that skin to be better. They put you in the lobbies with those so, then you feel like you have to buy that skin to compete… Take the [specific name] skin, you'll be playing your game with four other [specific name] skins, and they will kill you, right? …Every time you die, you're like, [specific name skin] is killing me. So, they sort make you think that for you to compete, you need to [have that skin] - Parent of teenagers and younger children

Reference Pricing

Children reported instances where prices were presented as discounted, when in reality they believe the price had not changed. Presenting the price in this way can manipulate young players into making purchases they might otherwise avoid. By presenting prices as "marked down", platforms create the **illusion of a bargain**, triggering an **emotional response** that encourages spending.

Additionally, when a time limit—or even the **perception of urgency**—is attached to these discounts, it intensifies the pressure to buy. The fear of missing out on a fleeting deal taps into **scarcity bias**[13], making the discount seem more valuable than it actually is.

Participants were aware of this practice because they had spotted examples where they had seen the item previously advertised at the same price, revealing that no actual discount had been applied. However, they were wary that similar misleading discounts might go unnoticed if they had not previously seen the item's price—highlighting a behavioural vulnerability where external cues dictate perceived value and urgency rather than actual savings.

> "They're trying to bribe you when they say that skin was 3000 and now it's 2100 because it never was 3000. I've been there since that skin was in the shop. That was never 3000 – they are trying to trick you." – Year 6 pupil

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[12] See 3.2.1 Overview of Harms: Loss of money
[13] Source: Mittane & Savadori (2009). Scarcity bias is a cognitive bias when the subjective value of a good increases due to the mere fact that it is scarce

3.4.9 How can misleading features lead to financial harm? - Gaming platforms

There are two main ways that misleading features can potentially lead to harm on gaming platforms:

1. **The lack of clarity about whether cosmetic features were linked to gameplay enhancements can mislead players into spending money on items that don't deliver the expected value.**
   Young people may purchase cosmetic items believing they will improve their gameplay experience, only to realise that these items are purely aesthetic. Participants expressed that this can lead to disappointment, frustration, and a sense of being deceived with the repeated experience of buying items that don't live up to their perceived value also diminishing overall enjoyment and trust of the game.

2. **The perception of artificial discounts can manipulate young people's perception of value within a game, pushing them to make impulsive purchasing decisions based on potentially misleading pricing information.**
   Where reference pricing techniques are used to advertise items as discounted even though their price hasn't changed, young people may feel pressured to buy them thinking they're getting a good deal. This can lead to uninformed and disappointing purchases as players later realise they were not genuinely benefiting from any discount and may have made a different choice had they realised this at the time.

3.4.10 Social influence features (cosmetic/account upgrades and loss aversion)

Social influence features include two sub-types of features: upgrades and loss aversion. Social influence features occur where there are upgrades or items that are technically optional, but where enjoyment and perceived 'status' on the platform is highly dependent on having them. This plays into peer pressures young people face and their desire for social validation. As a result, it means having certain upgrades feels like a basic requirement among children, to have any kind of competitive edge or validation from peers.

> *"Everyone else buys [in-game currency] and that makes you want to, because you might have a default skin and [peers] say [negative things] about it, and then I'm just that one guy without [in-game currency] and it's a bit odd" – Year 6 pupil*

Both parents and young people acknowledged the existence of peer pressure to spend money online. However, the youngest participants did not fully grasp the potential impact of how peer-pressure features work as a persuasive technique. On the other hand, teenagers tended to be more aware that these features are persuasive marketing tactics aimed at increasing purchases in the platform. Nevertheless, they tended to focus on the empowering aspect of being able to choose which items they would buy, and didn't always fully grasp that they didn't need to buy any at all, as they wouldn't affect gameplay.

These peer-pressure features can be categorised into two main categories – framing of upgrades and loss aversion:

Framing of upgrades

The way in-game purchases (such as changing the appearance of their characters, items, or environment) are framed plays a crucial role in shaping children's decisions and perceptions. Rather than simply being optional enhancements, upgrades are often presented in ways that influence how players view their choices—whether as essential components of their gaming experience or as a means of social belonging.

Teenagers reported that upgrades purely for aesthetic purposes have ultimately become a social norm— with the 'default skin' carrying negative connotations of inexperience. This framing makes aesthetic enhancements feel less like an optional customisation and more like an implicit expectation. Many players expressed that, even when these upgrades did not offer a competitive advantage, they still felt necessary to maintain status or fit in. The ability to personalise characters was seen as a form of identity expression, reinforcing the idea that participation in such purchases was not just about preference but about self-presentation or to 'stand out' among friends and other players.

While they did not necessarily see this as a harm, upon further discussion they felt that games frequently frame new skins and —often linked to famous brands or celebrities—in ways designed to encourage spending. By positioning upgrades as must-have experiences rather than simple add-ons, platforms effectively shape purchasing behaviours through behavioural framing rather than direct necessity.

> "I've got over 250 skins, and it can be more encouraging to buy because we're watching a famous [social media platform influencer] and they have it and its brand new, then you're like I really want that." – Year 9 student

Parents, on the other hand, expressed strong concern and frustration, and questioned why these features exist at all, often describing them as 'exploitative' and 'silly.' This sentiment was especially strong when it came to parents of younger children. Parents felt that the pressure to look a certain way in games exploited and exacerbated the peer pressure that children may naturally feel already. Parents described games as similar to a popularity contest, where players wanted the newest or "best" accessories or items. This in turn led to them wanting to make more in-game purchases, in order to maintain this level of validation. This issue was further exacerbated in games where there was a voting aspect, and where players were asked to judge each other based on the items they had curated. Parents reported feeling pressure themselves as well, because their children frequently asked for permission and more money to spend on in-game purchases to compete with or mirror others:

> "My daughter plays this game…. . She gets really addicted, and they make you think that if you don't have the VIP and don't have all the outfits it's bad. Her cousins have got it, and they want to play together, and they want to have the best and matching outfits. It's almost harnessing their peer pressure. It's pressure as a parent too, she's always like please can I have it." – Parent of 10-year-old

Commitment and Rewards
Streaks are designed to represent commitment and reward, showcasing how long users stay engaged with an activity—in this context, their daily interactions with another user. This perceived value is key to understanding why children place such importance on maintaining streaks.

This sense of value ties directly into the concepts of loss aversion. Loss aversion refers to the cognitive bias where the pain of losing something is felt more intensely than the pleasure of gaining something of equivalent value. In the context of online platforms, this can manifest when users are presented with the possibility of losing something, such as points collected in a game or a streak. While they might not have considered it worthwhile to purchase these points or streaks initially, they become more willing to pay to keep them once they are lost or threatened with loss.

This behaviour is explained not only by **loss aversion** but also by the **endowment effect**, which suggests that individuals tend to overvalue things simply because they own them. Once users have accumulated points or maintained streaks, these digital assets become part of their experience—something they "possess"—making the prospect of losing them feel disproportionately significant. The loss feels more painful than the equivalent gain would have felt rewarding, reinforcing the urge to protect and reclaim their progress.

Teenagers reported feeling a sense of loss and regret when they lost something, which drove them to spend more time on the platform in an attempt to regain what they had. Some noted that, because the cost to restore lost progress is relatively small, they often make impulsive purchases—especially in time-sensitive situations where the threat of loss feels immediate.

Teenagers, especially girls, reported the importance of streaks in social messaging platforms. They struggled to articulate why, suggesting they may not be fully aware of how **loss aversion** and the **endowment effect** shape their behaviour. However, they reported feeling "tempted" to pay to restore streaks after losing them, an indication that once they had these streaks, they felt they were more valuable than they would have been if they had never had them in the first place."

Parents reported they didn't fully understand the concept of streaks and this ability to be able to pay to get something back you've lost, but thought it was quite 'silly' as they perceived there to be no tangible reward.

3.4.11 How can social influence features lead to financial harm?
The main way that social influence features can potentially cause financial harm is by exploiting existing pressures and harnessing these to encourage addictive spending patterns, drawing children and teenagers to spending more. Parents and young people have identified and reported four main ways in which they perceived peer-pressure features to be harmful to children:

1. **Paid-for features to reinstate streaks directly exploit young people's fear of missing out (FOMO) and their psychological tendency toward loss aversion**.
   Young people felt reluctant to lose the 'time and effort' they have put into the platform – things that took time to 'earn'. This aligns with **loss aversion**, where individuals experience the pain of losing something more intensely than the joy of gaining something new.
   A sudden loss—whether in social media or gaming—triggers a strong emotional response, making young users feel like their efforts have been wasted. This feeling is intensified when their friends can witness the loss, further reinforcing the need to **avoid falling behind**. As a result, many young people chose to spend money to restore their streaks, not just for a sense of achievement but also to relieve the distress associated with losing what they had worked hard to maintain.

   "My daughter and her friends often compare their streaks, trying to get as high as they can, and on a number of occasions, she's been spending her pocket money to maintain her streak. She feels

it's something she's worked hard to achieve, and she doesn't want to have less than her friends." – Parent of younger child

2. **Pay-to-win mechanics create an uneven playing field, where those who spend more money have a significant advantage over others, ultimately encouraging spending in order to succeed.**
Participants expressed that play-to-win mechanisms leverages feelings of frustration and fear of losing, fostering addictive behaviour and encouraging more time spent on platforms. This can also have longer term negative impacts, with teenagers and parents reporting that the ability to pay to skip or level up in games sends the message that money matters more than skill or hard work:

"It feels like if you don't buy [in-game currency] it's a big skill gap between people that buy it and don't. It's like encouraging you to buy it because if someone buys it they're going to be better than you. If you're the one buying it then oh yeah it's better." - Year 9 pupil

3. **Young people feel pressure to spend money on cosmetic items to simply fit in**
This can detract from gameplay by shifting the focus to appearance (and therefore spending) rather than skill or strategy:

"Everyone else buys in-game currency and that makes you want to, because you might have a default skin and they say about it, and then I'm just that one guy without [in-game currency], and it's a bit odd." – Year 5 pupil

4. **Limitless skin / item upgrades encourage addictive spending patterns**
This sometimes resulted in with children getting stuck in a cycle of spending, then feeling validated, and then needing to spend again to maintain that feeling. They noted that it makes them feel pressured to constantly seek the next upgrade or item:

"Skins are important if you want to feel included. If you've got no skin it makes you feel left out – everyone is showing off their expensive skins and you've got nothing. I'd rather buy that than [buy] things that help me progress in game."- Year 9 pupil

3.4.12 Impulse activating features
Impulse activating features exist both in both social media and gaming platforms. They include things such as timers and forced decision making. This can drive users to spend money quickly without much thought, often interfering with rational decision making by leveraging high pressure situations and the fear of missing out on limited time offers.

Items appearing in-game that have not been available for a long time or have just been released, with no clarity around how long the item will be available for.
This feature can promote impulse buying, as young people noted that they have made purchases they later regret, driven by the fear of missing out or the desire to feel exclusive.

"Sometimes…there would be a random pop up saying you only need 200 more [in-game currency] to buy this item, but it doesn't tell you what's in it and I got a rubbish thing before."
– Year 9 pupil

Mystery rewards that are accessed once a player completes part of a game, but only valid during a continuous session of play.
This can override a natural opportunity to pause play – encouraging young people to keep playing (or start again if they want a different reward).

"If you get something you want, you want to keep playing coz otherwise you'll lose it. But if you get something you don't want you want to play again to get back to the wheel for another chance." – Year 5 pupil

While children were often aware of these features, they reported finding them difficult to ignore. Time-sensitive elements could mean that children felt under pressure them to make quick purchase decisions without fully considering the value or consequences. The fast-paced nature of gameplay, combined with tactics like creating scarcity or urgency, made rational thinking difficult, and children more susceptible to impulsive decision making.

3.4.13 How can impulse activating features lead to financial harm?

Young people reported gameplay itself to be occasionally stressful and with the addition of time-limited offers, an additional layer of pressure is added. Young people felt that time-limited offers both on games and online shops encourage impulsive spending and continuous engagement.

1. **Feeling under pressure to make a purchase decision because of limited availability or time limited offers (e.g. a countdown timer, flash sale or influencer time limited discount).**
   Young people found this interfered with being able to fully evaluate purchases properly, with the excitement of obtaining a new skin or item overriding rational decision-making:

   "You can be in the middle of a match, and something comes up and says do you want to buy a skin for your dog, it will help you, and then when you're trying to focus on killing the enemy it'll say do you want to buy this gun…yeah I might buy it because I want to get rid of that person right in the moment." - Year 10 pupil

2. **Encouraging users to focus on instant gratification rather than rational decision making:**
   Parents reported specifically being concerned about their children becoming used to not thinking decisions through and focusing only on the 'high' of instant gratification. They were concerned that this may be normalised and replicated in other areas of life. This was particularly concerning in relation to younger children who were still learning to evaluate decisions in a critical way and were less likely to recognise the manipulative nature of the features:

   "And then there's a countdown. You haven't got, you know, much time to consider your action you can do. I mean, I'm not sure if you buy those things there and then in the countdown. But like, you're sort of like rushing through doing it." - Parent of younger child

3.5 How parents and children are currently navigating persuasive features

3.5.1 Digital literacy among parents

Parents expressed varying levels of confidence when asked about their own digital skills. Some spoke about the need to use software at work, whilst others had more limited experiences and interactions with technology.[14] Regardless of their own skills, there was some consensus among parents that the digital landscape is rapidly changing, with new platforms, apps and features often emerging. Keeping up with these changes and understanding how they might impact their child is a challenge that even the most tech-savvy parents felt unsettled by.

> *"I'm generally good with digital tasks, but what kids are looking at is a completely different world." - Parent of younger children*

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[14] This variation reflects the sampling approach – i.e. we recruited parents with a range of self-reported media literacy. It may not be reflective of the population of parents as a whole.

Many parents acknowledged a significant gap between their own digital literacy and the advanced digital engagement of their children. This disconnect could make it difficult for them to fully understand the potential risks and persuasive design features on digital platforms.

> *"I don't know, it's a whole different world, talking to people on a headset somewhere else in the world, playing a mutual game together. That seems a crazy concept to me as an individual, and I don't feel equipped when she's doing it." - Parent of teenagers*

A common theme among parents was the uncertainty surrounding their children's online activities. Despite their best efforts, some felt that they can never be entirely sure about what their children are exposed to or engaging with online, especially as they get older – and this could lead to heightened anxiety and concern.

> *"You never 100% know what your children are getting up to {online}." - Parent of teenagers and younger children*

3.5.2 Actions taken by parents to mitigate against persuasive design features

Parents outlined a range of actions that they were taking. It is important to bear in mind that all the parents in the sample were concerned about their child experiencing online financial harm. It is likely that the actions taken by this sample may not be reflective of the wider population of parents, which also includes some who are not specifically concerned about this.

Restricting purchasing and setting boundaries

When asked how they currently manage their child's exposure to persuasive design features, parents mostly said they set boundaries or restrict what their child can and can't do online. Among younger children, this included creating specific rules around screen time and platform usage and personally overseeing all in-app transactions.

Some parents said they typically manage and control purchases by using their **own payment card** to complete online transactions, allowing them to monitor and regulate their child's spending. However, while this approach gives parents oversight, it can also inadvertently increase their vulnerability to financial harm if card details are saved to the digital platform and remain accessible to the child.

Several parents (and children) reported instances of unauthorised spending, noting that while saving card details is effortless, removing them requires significantly more effort.   This **friction** in the removal process functions as a **behavioural barrier**[15], discouraging precautionary action and making financial harm more likely.

> *"I can use my two cards, one's a [pre-pay] card, so there's nothing more you can spend. Because about four years ago, my 10-year-old was going on my phone, he was playing a game in the back of the car, he spent over 400 pounds from my bank account. He didn't even know, he just kept going with the game. It comes up on screen and you just tap it. I did manage to get a refund." - Parent of younger children*

Parents felt that making children accountable for unauthorised purchases helped them understand the financial implications of their actions, but this was a reactive measure, and didn't help parents or children to avoid the harm in the first place. Some therefore preferred the more proactive approach of removing card details after making each purchase, to help avoid unauthorised spending altogether.

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[15] Behavioural barriers occur when **effort, complexity, or inconvenience** deter people from making protective choices—even when they recognize the potential risks.

> *"I will not leave my bank details, card, register, whatever, on any of these games. Even if I do install them, even if I do use my payment, I'll make sure to do the extra effort to take it off." - Parent of teenagers*

A few parents also mentioned the use of **parental control apps**, to set platform time limits and further manage in-app purchasing. These types of apps can provide an extra layer of control by allowing parents to monitor their child's digital behaviour more closely, including allowing them to track spending. Awareness of existing spending controls and tools within platforms was limited – and even where they were known about, the consensus was that these measures are insufficient. Some parents felt that purchasing restrictions should be the default setting, allowing users to opt out of them, rather than having to apply all restrictions manually.

> *"Take {payments} out completely. All platforms should have parent authorisation or take away the purchase completely" – Parent of teenagers*

The limited awareness of these tools reflects a wider lack of parental knowledge when it comes to controls available to support online safety more generally – for example evidence from Ofcom's Children and Parents Media Literacy survey[16] and [Internet Matters](#) demonstrates that besides generic broadband controls, knowledge of online safety apps and tools remains relatively limited among parents.

> *"I've got, like, securities on my apps and stuff where it always asks for, like, I have to go on the app to authorise a payment" – Parent of teenagers*

Instead, parents were typically more comfortable using tools that allow them to prepay an amount of their choosing. This included using **gift vouchers and pre-paid cards**

> *"I just think there's always a risk of being compromised if they're accessing your card to buy stuff. If you spend another five, we'll give you another 10. Spend another 10 pounds, we'll double it for you. There's always some sort of scheme. So give me the gift cards. You put 10 pounds on or 20 pounds, and that's it." - Parent of teenagers*

These cards offer a more tangible and straightforward approach to online spending – allowing parents to set clear limits on what their child buys. By limiting funds to the amount available on the card, they can prevent accidental overspending and keep a closer eye over how much their child is spending. For some parents, this approach is a direct response to help mitigate the persuasive tactics that encourage children to spend more money.

> *"I'd rather buy the gift card than buy it in the digital shop. And if I bought that gift card, then put it onto the game. And I know once that gift card is gone, you know, there's no accidents, yeah, that I've had, I felt like that would be better, more controlling as well. You know, there's 10 pound and when it's gone it's gone." - Parent of teenagers and younger children*

Pre-paid cards and vouchers were also perceived to offer a practical way for children to learn about digital transactions and money management. As they get older and parents begin to ease some of the rules and restrictions around online spending, these methods could help to foster independence and help children develop a sense of accountability for their spending decisions.

Engaging with online platforms and providing informed guidance

Aside from creating rules and restrictions, some parents told us they **assign specific responsibility** for setting up digital accounts and overseeing online safety to one member of the household – typically the most digitally literate parent or guardian, or an older sibling. This enables those who are less confident to take a step back – but in doing so, it potentially extends the knowledge gap and risks an over-reliance or over-dependence on one person.

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[16] Source: Ofcom [Children and Parents Media Literacy 2024, Table 23](#)

"I have had to rely on my older sons to do it. I feel scared of technology. I just want a better understanding." - Parent of teenagers

Other actions taken by parents to help mitigate their child's exposure to persuasive design features, include actively engaging with digital platforms, registering their own accounts and becoming informed users themselves, and just generally taking a more proactive approach to learning about the digital landscape. Some parents had created accounts on digital platforms to monitor their child's usage and become more informed about the environment in which these platforms operate. Some still struggle to keep pace with new and evolving features though, especially where they don't have a personal interest in the platform's output. Where parents do share a common interest with their child, they were able to fully immerse themselves in the platform, helping them both to feel more confident as a result.

"I've got started...set up an account myself – just so I can keep an eye on the kids...[The platform's] shop is hit and miss. There's a lot of misleading stuff on there." Parent of teenagers

3.5.3 Actions taken by children

Learning from parents

Involvement of parental guidance and a focus on developing some level of financial responsibility was a common thread among the children we spoke to. The findings from the groups suggest that parental engagement plays a crucial role in helping children to understand the concept of money, and to help mitigate financial harm. Open discussions about finances help children to grasp the value of money and make more informed decisions. The absence of these financial lessons is likely to increase the risk of exposure to financial harm later in life.

"You understand {the concept of money} when your parents start teaching you about it. I think my parents were very much like, a lot of people didn't talk about the prices of things and were like 'don't speak about money to them', but I'm glad they did" - Year 11 pupil

Actions taken by children to mitigate persuasive design features on digital platforms were heavily influenced by the boundaries put in place by their parents. The role of parents as both enforcers and educators were significant in shaping children's financial habits and online spending.

"When I started high school, me and my sister, we started getting an allowance on the first of every month. My parents said you're paying for your friends' birthday presents from now on. So it kind of like taught budgeting, like, yeah, how much you have to spend on yourself each month" - Year 11 pupil

Parents typically had direct oversight of online purchasing among younger children, with strict boundaries likely to be a non-negotiable condition of access. With age comes greater financial independence and freedom though, with parents tending to take a less active role in online spending as children get older. Instead, they shifted towards more of an advisory role, with children talking about their parents continuing to provide guidance, authority, and support as needed. Some children collaborated with their parents, seeking their advice to compare prices and identify trustworthy sites.

"Whenever I want to buy something, I always tell my mum first, so I sit down and I'll look at the products I want, and then she'll like, help me compare the price and see which one's like, better. Like, what site is more trustworthy? Which one I'll get the better value out of things like that?" Year 9 pupil

Others enjoyed a level of spending autonomy, whereby they're trusted by their parents to make purchases, as long as the amounts are not too large. As they grow older, teenagers are more likely to feel confident making purchases below a certain threshold without needing parental approval. Some also continued to seek approval for higher value purchases such as clothing.

"If the price is like, extortionate [then I will seek approval], but anything below £100 I probably wouldn't" Year 11 pupil

Learning from mistakes

There was evidence of children **experiencing mistakes** along the way though – sometimes their own, sometimes those of others around them, particularly among peers and siblings. These included accidentally signing up to a subscription service and spending money on a parent's bank card without their knowledge. These mistakes can create valuable learning experiences for children and their parents. But there was also some evidence among older children that they can be reluctant to share mistakes with their parents at the time, preferring instead to deal with it themselves – potentially because they fear repercussions or disappointment. Digital behaviour and online spending are highly emotive issues, with parents sharing the anxiety and frustration they often feel as they navigate this journey with their child. Learning from mistakes can help children to develop a stronger sense of financial responsibility – but ultimately, these learning opportunities are a reaction to a financial harm having already occurred, and this in itself can be problematic.

Increased self-control with age and experience

Self-regulation became more evident as children get older, especially where levels of parental engagement and guidance have been high. Teenagers spoke about using gift cards and e-vouchers to limit their spending online (mirroring the behaviour of parents) and adopting their own self-enforced spending limits to avoid excessive spending. Parental engagement in our groups was generally very high, and this was evidenced by the discussions around setting clear rules and boundaries. Where parental engagement is low or digital literacy is limited, there is the potential for increased vulnerability to financial harm. This is because children were frequently mirroring protective actions taken by their parents – so if their parents were not taking any actions, there were fewer examples for them to learn from.

Evidence of critical thinking and media literacy skills became more apparent with age. The teenagers we spoke to demonstrated a relatively good level of awareness in terms of evaluating digital platforms and identifying persuasive features. There was also some evidence of cross-referencing information online to check the authenticity of different sellers and promotions, and to read reviews from other users. Some teenagers had taken specific actions to guard against persuasive features – for example reducing the temptation of impulsive spending by not saving their payment details on the platforms that they used.

> *"I always check if I'm gonna buy a product…I'll see if there are other reviews and always check if they've like, tagged the brand, or if it's linked, because then, you know, it's an advert"- Year 11 pupil*

This more critical approach to online spending comes from a combination of experience, parental guidance, and learning from past mistakes. In addition, participants felt that simply getting older and developing better reasoning skills and impulse control helped them to make more informed decisions. However, where any of these skills or experiences are under-developed, there is likely to be an increased risk of exposure to financial harm.

> *"It makes me think that when I was younger, I would buy whatever, then go into another game and it looked cool, so I'd buy more. I think now I find a game that I really like and don't just spend on a bunch on little random games" - Year 10 pupil*

3.5.4 Challenges to protecting children

Most of the parents in the sample had either taken some action to try to protect their child online. or somebody else in their household had done so. However, there were also some parents who did not feel equipped to take any steps. They were worried about potential online financial harm, but they felt overwhelmed by the speed that online platforms have developed. And they felt helpless, as they lacked knowledge of what steps they could take to protect their children. Parents also gave examples of other people who they knew, and who struggled to put into place any kind of protective actions.

> *"One of my friends who didn't put any restrictions, she had a [> £1500] bill. Her son's got ADHD and was utterly unaware. I mean, he was very young at the time, many years ago, unaware of the fact that it was costing money – Parent of teenagers*

And even amongst those who had taken action, parents identified two key factors that make it challenging for them to mitigate against persuasive design features.

- First, their own **media literacy skills**. Parents are quick to admit they struggle to keep pace with the evolving nature of digital platforms, and they're not always aware of the tools available to help them safeguard their child online. This lack of familiarity with the digital landscape can make it challenging for them to understand and mitigate against the potential risks, especially when their children are often so deeply immersed in these digital worlds.

- Second is the **perceived lack of regulation**. One parent described the online world as *"the wild west,"* feeling that there is very little legislation or regulation to help keep their children safe. This concern was compared to other potentially harmful activities or items such as sugar and gambling, both of which have strict regulations when it comes to children.

> *"I feel guilty sometimes because I just don't have an interest in {online gaming}." - Parent of teenagers*

> *"It's all a bit like the wild west really, in the sense that everyone's out for themselves. There's not like one governing body that is going to get everyone to adhere to some kind of code of conduct" - Parent of younger children*

To help navigate these challenges more effectively, parents said they would like more user-friendly parental control tools on digital platforms, along with stronger, clearer and more transparent regulations to help protect children online.

> *"The onus now is on parents. It's hard, kids want to be gaming, and there's the peer pressure to be there. And actually if there's things that make it easier, I might want to invest my money in that, because that's going to ultimately make it easier with my child or what boundaries I can set" - Parent of teenagers*

Children themselves were less aware of persuasive design features, although teenagers often recognised them in hindsight. Younger children, especially primary and early secondary school aged, placed a great deal of trust in familiar brands, digital platforms, and creators / influencers. For instance, younger participants often did not exhibit awareness that information shared on their preferred platforms may be misleading – this was particularly apparent when it came to content creators or influencers that they followed. This perceived trust enhances the leverage and credibility of persuasive content among younger audiences.

> *"They don't realise how they're edited. They believe everything they see and think 'I need that'" Parent of young children*

Furthermore, although not identified by the children themselves as a challenge, there were many examples where children were able to access things or make purchases by bypassing age verification processes. As referenced earlier the report, this included under 13s having access to social media, and under 18s being able to sign up to subscriptions.

3.6 Suggested mitigating solutions to address child financial harm related to persuasive design

3.6.1 Overview of solutions

As part of the research, parents and children generated a range of potential mitigating solutions that they felt would be helpful. These are the viewpoints of participants and no further testing or

assessment has been conducted in relation to them. This section simply reports the ideas generated in the qualitative fieldwork environment.

Different types of solutions were felt to be appropriate depending on the type of feature, how harmful it was deemed to be, and the age group at risk of exposure.

Analysis of the solutions generated created three broad categories:

- Restrictive solutions were based on the removal or restriction of certain features.
- Balancing solutions were based on counteracting or reducing the negative impact of certain features.
- Empowering solutions were based on giving users tools to manage and deal with certain features.

In addition to these categories, participants also identified holistic solutions to target the harms resulting from the broader addictive nature of platforms.

Figure 4: Categories of solutions generated

RESTRICTIVE	BALANCING	EMPOWERING
Solutions based on removal or restriction of certain features	Solutions based on counteracting or reducing the negative impact of certain features	Solutions based on giving users tools to manage and deal with certain features
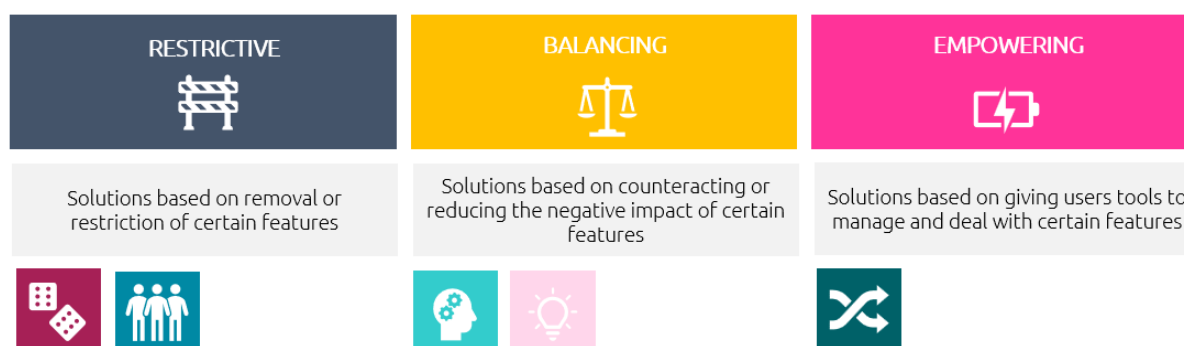
3.6.2 Restrictive solutions

Restrictive solutions were typically suggested by parents rather than by children. These solutions were felt to be most relevant for targeting risk-based and social influence features, but also had some wider relevance across all categories of feature - particularly in terms of protecting the youngest children. It was noted that in order to effectively restrict content based on age, age verification processes must be robust. Parents did not feel that current age verification processes were robust enough, and therefore any implementation of restrictive features must come alongside a tightening up of age verification.

Restrictive solutions for risk-based features

Risk-based features as a category were felt to be the most concerning type of feature. There was a strong sentiment that these were particularly harmful since they were perceived to mirror gambling and normalise risk-taking behaviours. Parents felt that features which closely mimicked gambling were unsuitable for a child audience, and therefore the only solutions felt to address these would be removal of the feature, or age restrictions to prevent children from having any access to them. In line with the perceived level of harm that these features caused, parents felt that the more like gambling they were, the higher the priority was for them to be restricted. Therefore, restriction of risk-based features which involved the purchase of unknown items, was felt to be the highest priority.

> *"They should have an 18 certificate on the ones that do sell the packs [where the contents include an element of surprise], because they know their brains are not fully formed. Yeah, it's teaching bad financial habits as well." - Parent of teenagers*

Restrictive solutions for peer pressure and wider features

Restrictive solutions were also perceived as a useful tool to help curb the impact of the other categories of persuasive features. While parents felt that risk-based features should be restricted across all age groups, the implementation of restrictions relating to other features was felt to be most relevant for primary and early secondary school aged children (children up to age 14). It was noted that the younger age groups were particularly vulnerable to persuasive features and that restrictive solutions could be valuable in supporting parents to protect their children, while gradually moving them towards greater independence.

Parents identified the following restrictive solutions:

- **Controls allowing parents to block children from seeing anything that can be bought:** This would mean that children could still access a game that their friends also had, but would not be exposed to any of the persuasive features which their parents did not feel they were mature enough to engage with. There was some concern that a solution like this may not go far enough as children would want to have the same version of a game that their friends had, so there would likely be peer pressure to still use the original version with the in-app purchasing. However, parents also suggested that groups of parents may all choose to stick with a no-purchase version, meaning that whole friendship groups would not have access to purchasing – and the peer pressure that comes along with this. There was a sense that some parents would be willing to pay an upfront fee in order to block this content, though others felt that this option should come as standard.
- **Option to pay a standardised upfront price for a game, instead of downloading for free and spending within app.** Parents frequently noted that they would prefer to be able to buy a game, rather than downloading it for free and then being required to make multiple purchases. Having the option to do this would mean that they – and their child – would have a more transparent view of the actual cost of the game. This was felt to be more beneficial in terms of being able to teach their child about finances and value. And it meant that the child would then be able to play freely without being influenced by peer pressure.
- **Enforced spending limits:** Restricting how much a user could spend during a set period of time was recommended as an effective way to curb the impact of impulsive and social influence features which could lead to children rushing through transactions and not thinking carefully about their actions. This was also seen as a way of addressing the dissociative effect of microtransactions – where a user could easily lose track of how much their individually small transactions were adding up to.

"So, the platform, I think they should make it user friendly, so there's options... it could be max five pounds, 10 pounds, 15 pounds. It should be very user friendly, so that parents can set limits in situations where you know you spend a lot more than you wanted to. So I just think it should be the same where there is a spending cap" - Parent of teenagers

Placing restrictions on how much users could spend in a single transaction was recommended as a way of helping users avoid making accidental larger purchases – this could help address some of the competitive spending encouraged by social influence features, and accidental spending due to misleading features such as drip pricing structures.

3.6.3 Balancing solutions

Balancing solutions are solutions based on counteracting or reducing the negative impact of certain features. Rather than removing potentially harmful features, these solutions focused on limiting or mitigating the potential harm. Balancing solutions were generated by both parents and children across the age ranges. In some cases, parents would have preferred fully restrictive solutions but felt that platforms may be more likely to consider balancing solutions. In other cases, balancing solutions

were considered to be the most appropriate way to support children in navigating persuasive features in a considered way, especially as they reached secondary school and started to build independence.

Balancing solutions to address dissociative features

Where dissociative features make it harder for users to stay conscious of what and how much they are spending, these suggested solutions were considered to serve to help children to be more mindful and deliberate about spending decisions.

The following balancing solutions were suggested by both parents and children:

- **All prices to be shown in GBP:** This was seen to be an easy and effective way to reduce the dissociative effect of purchasing in-game items and was suggested in every focus group conducted. Some participants indicated that they would prefer to remove in-game currency altogether, so that prices were only shown in real world currency. However, others suggested that the real-world currency just be shown alongside the in-game currency so that players would always be able to see both.

    "A prices and money converter. If something is like 50[in-game currency], it would be good to know that 50 [in-game currency] equals, like £75." Child aged 11

- **Reminders that you are still paying if you have subscriptions.** Where participants had signed up for subscriptions such as monthly gaming passes or premium versions of social media, they found that it was easy to forget about the money that they were spending on an ongoing basis. A reminder, by email or phone notification, each time the payment was to be taken was perceived to be a useful way to keep this spending top of mind. Participants also suggested that this reminder could include details of how much they have spent cumulatively on the subscription as well as upcoming payments.

The following balancing solution was suggested by parents:

- **A comparator tool, where a user can see the value of purchases compared to real life equivalents.** A tool that would allow users to compare costs of different items was felt to be a useful way to help close the cognitive distance between the activity and spending money. By showing comparisons with physical real-world items that children may buy in shops, it could help to connect their thinking back to the act of actually exchanging money for a tangible item. Parents suggested that this could be built as a customisable tool, so that users or parents could set it up to show items which they do actually buy in real life. This solution was felt to have the additional benefit of being educational, and helping children more broadly to develop better financial literacy. Parents acknowledged that it may not be a platform's direct responsibility to provide this kind of education. However, they felt it would help to balance out some of the more negative impacts of persuasive design, in terms of how children think about finances.

Balancing solutions to address impulse activating features

Where impulse activating features encourage users to make quick, impulsive decisions, these suggested solutions counteract this by encouraging more thinking time and consideration, before making purchases.

The following balancing solutions were suggested by both parents and children:

- **Additional steps before users can make a purchase:** The purpose of these was two-fold – firstly to increase the amount of time taken to complete a transaction, thereby giving children a greater window of opportunity to review their decision. And secondly, as a way to disrupt the flow of their impulsive behaviour by forcing them to think about other things during the process. It was considered important that additional steps required some action on the part of the user, rather than being a passive process simply taking a bit longer. Additional steps suggested included pop-

up screens which require further information to be inputted before the transaction can be completed. Participants also suggested that this type of solution could work in conjunction with other balancing solutions. For instance, a comparator tool could pop up to show items with equivalent real-world costs.

> *"They could make it a little harder so they could make you add, like, a code, like your password, so it says if you put your phone password in, then you'll be able to buy it - because it's so easy just to press two buttons." Year 9 pupil*

> *"If you're going to buy something, [it should ask] - Are you sure you want to purchase this? This will leave you with X amount leftover. You have this with online banking. If I want to transfer my partner £50, it asks if you're sure, and tells you what your balance will be. Kids need to be able to visualise [the money] being taken away before they've even bought it." Parent of teenagers*

- **Digital refunds that are straightforward to access:** Parents and children expressed a lack of clarity about whether and how they could access refunds, if they changed their mind about a digital purchase that they had made impulsively. In some cases, they expressed a belief that they could not access refunds for certain platforms, or that they could only access a limited number in a given timeframe. Others had experienced going through a refund process, which was perceived to be particularly onerous. As a result, children reported that they'd be more likely to simply accept the loss of money rather than attempt to go through the refund process. However, they were not happy about this and there was a sense that refunds should be handled in a similar way to buying and returning physical items.

> *"You can go and buy actual clothes and then return them. I don't see why this should be any different – the same thing should apply." Parent of teenagers*

- **Cooling off periods between spending, or pop-up warnings if a lot of transactions are made within a short time period:** This solution was suggested as a softened version of enforced spending limits – and felt to be particularly suitable to tackle the impact of cumulative spending and microtransactions. Forcing users to take a break from spending, could help prevent them getting carried away with spending more than they intended to. Meanwhile, warnings and reminders of how much they had spent could help address both impulsive and dissociative elements of persuasive design.

The following balancing solution was suggested by parents:

- **Rewards for not spending money quickly – e.g. adding "interest" to an in-game currency balance, if it is not used for a certain time period:** This idea was felt to act in a directly oppositional way to persuasive features that encourage spending, as it could be a persuasive feature to discourage excessive spending. Parents suggested this in relation to gaming platforms where users pay for currency which is then kept as credit until used up. They explored the idea that gaming platforms could learn from online banking apps which encourage saving by offering rewards. Although this was conceived as a way to curb impulsive spending, it was felt that it could have wider positive impacts for dissociative features, and for addressing the impacts of persuasive design more broadly.

3.6.4 Empowering solutions

Empowering solutions are those based on giving users the relevant tools to manage and deal with persuasive features. While participants hoped that some persuasive features may be restricted, or their impacts reduced, they felt that persuasive design would always exist to some extent, in the platforms that children use. Therefore, an important priority was ensuring that children were able to learn to navigate these as safely as possible – and it was felt that platforms had a responsibility to

contribute towards this. Empowering solutions were perceived to be relevant to address misleading features by giving them greater understanding and media literacy.

Empowering solutions to address misleading features
Where misleading features result in uninformed purchases due to a lack of clarity around the product or cost, these suggested solutions serve to increase understanding, thereby giving users the tools to make balanced decisions.

The following empowering solutions were suggested by both parents and children:

- **More clarity around the veracity of influencer advertising:** Younger children – particularly those aged 8-10 exhibited considerable lack of awareness around the context and reliability of influencer advertising. This awareness increased amongst older children – particularly once they reached 13-14. And while older teenagers more likely to have better awareness, this had often been gained through direct experience of financial harm.

- **More guidance around how to avoid scams:** Even older and more savvy users, could still be susceptible to scam sites which were accessed by clicking through social media advertising. Having platforms include clear information that is easily visible was felt to be a useful way to empower users to make informed decisions about the advertising and products that they see. Participants felt that this needed to go well beyond content creators simply stating that something is a paid-for ad – as users didn't necessarily understand that the content creator may not even use the product that they are promoting. Likewise, participants felt that platforms had a responsibility to provide clear and visible information about the risks of following affiliate links, and how to ensure the veracity of such links.

The following empowering solutions were suggested by parents:

- **Forced interventions aimed at empowering users, such as providing users with an educational video that they have to watch before accessing the platform:** This would be a way to set expectations for the kinds of purchasing opportunities that they would be exposed to in the platforms, and would ensure that all users were equipped with at least a base level understanding about how some persuasive features may encourage spending.

  > *"They could have short videos at the beginning of games, targeted towards kids to explain the risks of gaming and spending and peer pressure." Parent of teenagers*

- **Having an account section on platforms (particularly games) where you can manage your balance and spending:** Much like the suggested rewards for not spending money quickly (see balancing solutions), this solution took inspiration from the types of features used by children's bank accounts to help manage saving. The idea of this would be to equip children with better overall financial literacy, which may then translate to better resilience to the lure of persuasive design features.

The following empowering solutions were suggested by children:

- **Additional information provided before you can make a purchase:** Where children were sometimes unsure about the exact benefit that a purchase might confer to them, a pop-up window at the point of purchase could provide this clarification. For instance, this would clarify whether an item was purely cosmetic, or whether it would impact gameplay. Likewise, if the purchase they were making involved any ongoing spending (e.g. a subscription), the pop-up could explain clearly what the overall cost would be, and how this would be split out.

- **Greater upfront transparency around shipping costs or additional fees:** With regards to buying physical items linked to through a social site, participants felt that a simple way to avoid misunderstandings around how much something cost would be to list the complete price, including any shipping or other fees. This would mean that they could make an informed decision

about whether to purchase before placing the item in their basket or going to the checkout page. There was also a sense that shipping costs were disproportionate to items – sometimes costing as much as, or even more than the item. Participants felt that this was inherently misleading and that shipping costs should always be proportionate to the cost of what they are buying.

3.6.5 Holistic solutions

In addition to the solutions discussed in sections 3.6.1 - 3.6.4, which focus specifically on targeting persuasive design features which encourage spending, participants also identified a role for broader interventions to address persuasive design.

These broader interventions mirror some of the other solutions generated – including restrictions, balancing solutions, and more information to empower users with better media literacy. These interventions focused in two specific areas – the time children spend on platforms, and the advertising which is targeted at them.

Solutions focused on the time children spend on platforms: Parents and older children alike, felt that the longer the time spent on platforms, the greater the exposure to persuasive design, and the greater the likelihood that they would "fall into traps" of spending more money than they intended to. Reflecting the categories of "restricting", "balancing" and "empowering," the following solutions were recommended by participants:

- **Restrictive - Enforced time limits on continuous platform use, or use per day/week:** This solution was generated by parents, and mirrored some of the suggestions around restricting transactions. Parents felt that restrictions of this nature would be beneficial for children, ensuring that they had adequate down-time away from potentially harmful persuasive features. They felt that having these restrictions as platform mandated would mean that parents and children would not be susceptible to the peer pressure effects that may make it difficult for them to enforce their own restrictions or self-police.

- **Balancing - Natural "pauses" built into games, to discourage users from playing continuously:** Where many gaming platforms encourage continuous play, building in natural breaks would help to counteract this, and encourage users to take time away. Where many gaming platforms involve an in-game world which doesn't follow a traditional game structure with a clear start and end point, platforms could introduce clear rest points within the in-game world, for instance after certain challenges or activities are completed.

- **Empowering - Pop-up warnings with information to encourage users to take a break:** While these pop-ups would not force users to take a break, they would include information about the benefits of taking a break, and the potential harm associated with remaining on a platform for excessive amounts of time. The rationale of this would be to equip users with the appropriate information to make balanced decisions about how much time they spend online, and on the platforms in question.

Solutions focused on the advertising that children are exposed to via platforms: As discussed in section 3.1, the volume and design of advertising was perceived to keep children continuously engaged, and to encourage addictive behaviours. Both parents and children were supportive of interventions to help reduce the impacts of this. These interventions reflect the "restrictive" category of solutions.

- **Restrictive: Greater restrictions on the volume of advertising, particularly within platforms aimed at younger users:** While participants acknowledged that advertising is often necessary to help fund platforms that are free to access, they felt that specific care needed to be taken when it comes to platforms that are targeted at children, or which have a large younger audience. They drew on examples from Children's TV, where they believed that there were clear guidelines to

limit the amount of advertising targeted at children, as well as restrictions on what products could be advertised to children.

- **Restrictive:** Greater restrictions on cross-platform targeted adverts: Participants described how it was easy to become fixated with something they had seen online, when they were subsequently bombarded with advertising for said item across all of the platforms that they used. This applied both to products for purchase, and to advertising for games. This kind of repetitive and intense advertising acted in a similar way to peer pressure – playing on existing fear of missing out (FOMO). Participants recommended that restrictions to cross platform targeted advertising would help to reduce the pressure they felt. They suggested that cookies should be restricted as a default for child accounts and platforms targeted at children.

4 Conclusions

Online financial harms related to persuasive design features exist in a wider context. In exploring these harms and the related persuasive design features, the wider context was referenced consistently as a key concern amongst participants. In particular, the context of an online environment, which children increasingly rely on for social interactions, and which permeates all aspects of their lives, was reported to be extremely influential in shaping their thoughts, feelings and behaviours. In relation to the scope of this study, the research suggests that persuasive features that encourage spending are magnified by other broader kinds of persuasive features, which encourage children to maintain continuous engagement on online platforms. Going beyond financial harm, parents, and to some extent teenagers, expressed concern about the wider impacts of persuasive design, in relation to wellbeing and mental health.

The research identified five categories of features that may lead to financial harm, based on the way in which they encourage spending money. These categories are not entirely distinct, and participants mentioned many examples of persuasive design that incorporate more than one category. The categories that have been identified are described throughout this report as risk based, dissociative, social influence, impulse activating and misleading.

The age group of early secondary school (11-13) was perceived to be particularly vulnerable, due to a range of overlapping factors. This point was highlighted both by parents and older teenagers. It was felt that this age group would stand to benefit considerably from the development of protective measures, which would help guide them towards greater independence while minimising the risk of financial harm.

Within the categories of features, risk-based features were identified as the most concerning and were perceived to be inherently harmful, as well as inappropriate for a child audience. This was linked to the fact that participants felt these features mirrored gambling in a number of ways, and as such they were perceived to affect users in similar ways to gambling. Furthermore, risk-based features were felt to be particularly linked to longer term impacts, including longer term negative financial behaviours, and effects on how children think about finances. With this in mind, restrictive solutions were the only kind of solutions that parents considered to be suitable for addressing these features. Restrictive solutions are those based on the removal or restriction of certain features.

A range of different types of solutions could be effective for mitigating against harm caused by dissociative, social influence, impulse activating, and misleading features. Restrictive measures were considered to have a role, especially for younger children, but participants felt that these features may also be tackled through balancing and empowering solutions. Balancing solutions are based on counteracting or reducing the negative impact of certain features. These were considered well-suited to addressing dissociative and impulse activating features. Empowering solutions, include those that are based on giving users the relevant tools to manage and deal with persuasive features, and they have a strong focus on improving media literacy. These were considered well-suited to addressing misleading features.

Reflecting the importance placed on the wider context of the perceived addictive nature of the online world, participants also suggested more holistic interventions. These focused on reducing the impact of persuasive design in general, rather than persuasive design directly linked to encouraging spending.

Risk-based features were considered the highest priority in terms of their potential to cause harm. However, there may be other factors to consider, in terms of which features are of highest priority to address. It goes beyond the scope of this study to make a definitive recommendation around this. However, some key considerations include:

- The age groups which would stand to benefit most from a solution – as discussed earlier, those in the 11-13 year old age group were considered to be most vulnerable, and therefore

there may be value in prioritising interventions which are most likely to protect them. This is supported by Ofcom's review of children's developmental ages, stages and online behaviour which informed its Protection of Children Statement[17]. This review highlighted that children in the transition years (10-12) are faced with a number of changes including the transition to secondary school, puberty, increasing peer pressure and impulsive behaviour. When these factors are combined with increasingly independent use of devices for online activities, they can be vulnerable.

- The wider impact of the solution – for instance some of the solutions suggested, including those aimed at increasing financial literacy, have the potential to have a positive impact beyond just the specific features that they have been recommended to address.

When children and parents took protective steps, these often tended to be reactive rather than proactive. There was considerable evidence that protective behaviours taken on by children and their parents, were a direct result of learning through mistakes that they had made in the past. While learning through making mistakes is not inherently problematic, platforms could explore and encourage proactive learning and solutions such as those outlined in this report. Parents felt that the platforms where their children were spending money, and sometimes experiencing harms related to this, had a responsibility to provide more effective protections.

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[17] Source: [Protecting children from harms online - Volume 3: The causes and impacts of online harms to children](#) (Section 7.15)

5 Appendices

5.1 Detailed breakdown of sample

5.1.1 Scoping sample

	Group	Location	Sample	No. of participants
1	Scoping 1	London (Romford)	Year 10, mixed gender	6 (3 boys, 3 girls)
2	Scoping 2	East Anglia (Suffolk)	Year 7, mixed gender	6 (4 boys, 2 girls)

5.1.2 Main stage sample

Parents

	Group	Location	Sample	No. of participants
3	Parents 1	England (London)	Parents of 8-10 yrs ABC1	8
4	Parents 2	England (London)	Parents of 11-13 yrs C2DE	6
5	Parents 3	N.I (Belfast)	Parents of 11-13 yrs ABC1	8
6	Parents 4	N.I (Belfast)	Parents of 14-16 yrs C2DE	8
7	Parents 5	Scotland (Edinburgh)	Parents of 8-10 yrs C2DE	8
8	Parents 6	Scotland (Edinburgh)	Parents of 14-16 yrs ABC1	8
9	Parents 7	Wales (Cardiff)	Parents of 11-13 yrs ABC1	8
10	Parents 8	Wales (Cardiff)	Parents of 14-16 yrs C2DE	8

Older children

	Group	Location	Sample	No. of participants
11	Older children 1	London (Romford)	Y7 Girls	8

12	Older children 2	London (Romford)	Y9 Boys	8
13	Older children 3	London (Romford)	Y9 Girls	8
14	Older children 4	Wales (Cardiff)	Y7 Boys	8
15	Older children 5	Wales (Cardiff)	Y9 Girls	8
16	Older children 6	N.I (Co. Derry)	Y9 Girls (equivalent to Y8 ENGLAND)	8
17	Older children 7	N.I (Co. Derry)	Y11 Boys (equivalent to Y10 ENGLAND)	8
18	Older children 8	Scotland (Tranent)	S3 Girls (equivalent to Y10 ENGLAND)	7
19	Older children 9	Scotland (Tranent)	S2 Boys (equivalent to Y9 ENGLAND)	6
20	Older children 10	East Anglia (Suffolk)	Y11 Girls	10
21	Older children 11	East Anglia (Suffolk)	Y11 Boys	10

Younger children

	Group	Location	Sample	No. of participants
22	Younger children 1	England (Norfolk)	Boys, 10-11	4
23	Younger children 2	N.I (Belfast)	3 girls, 1 boy 9-10	4
24	Younger children 3	Wales (Cardiff)	3 boys, 1 girl, 9-10	4
25	Younger children 4	Scotland (Edinburgh)	2 girls, 2 boys 8-9	4

5.2 Sources consulted for the desk review

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- Citizen's Advice and The Behavioural Insights Team (2024) A review of online choice architecture and vulnerability
- CHILDWISE (2024) Monitor report, 2024
- CHILDWISE (2024) Playground Buzz report, Autumn 2024
- Ofcom (2024) Children and Parents Media Use and Attitudes report 2024
- Tech Shock: the Parent Zone Podcast | Parent Zone | At the heart of digital family life Has media literacy's time finally come? Guest: Julian McDougall, Professor in Media and Education at Bournemouth University