

# Between Gaming and Gambling

## Children, Young People, and Paid Reward Systems in Digital Games

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# About the authors

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**The authors of this report bear responsibility for its contents.**

# Executive Summary

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## Introduction

The aim of this research was to provide in-depth qualitative evidence of how children and young people engage with, understand, and experience paid reward systems (chance-based mechanisms, in-game currencies, battle passes, and direct purchases) in digital games (across console, mobile, and PC) and how these practices take place within the spaces of the home. The research involved over 100 hours of video ethnography with children and young people, conducted over multiple visits

to the homes of 42 families from the North East of England. It also included in-depth interviews with 20 parents and carers of children and young people who have purchased loot boxes or other chance-based items in the digital games they play. 10 game designers who have worked on digital games containing paid reward systems were also interviewed. Data collection took place between August 2019 and July 2022.



## Key findings

The research highlighted the lived experience of children, young people, and their families in relation to paid reward systems. Analysis of the data collected demonstrated:

**1** In-game chance-based mechanisms, like loot boxes, can and do cause harm to children and young people, including forms of financial and emotional harm.

**2** Children find it difficult to track their spending in digital games and fail to understand the value of money, creating inadequate conditions for making purchasing decisions.

**3** Digital items are highly alluring, desirable, and collectible to children and young people and this drives repeat purchasing.

**4** The design of in-game paid reward systems borrows techniques from regulated gambling to entice players to engage for longer in digital games and spend more money.

**5** Internet-connected digital games are enlivened by a range of temporal rhythms that influence purchasing decisions and manipulate spending patterns in children and young people.

**6** Parents and carers feel stuck in a vulnerable position, wanting to safeguard their children from potential harm when they spend in digital games, while tolerating their access to gaming because of the social benefits.

**7** A manipulation of the gaming experience creates unfavourable conditions for making purchasing decisions, especially for children and young people.

## Conclusions and recommendations

Digital gaming can deliver benefits in terms of skills development and socialisation for children and young people. However, there exists a real potential for children and young people to experience harm in relation to in-game spending and use of paid reward systems. As such, the following recommendations are made:

**1** The gaming industry should have its own independent regulator.

Given the range, reach, and complexity of paid reward systems in digital games, the manipulation of the gaming experience for the purpose of increasing player spending in-game, and the speed at which the industry can innovate, there should be a new independent regulator for the gaming industry. The regulator would be responsible for ensuring that gaming is fair and safe for all players and their families.

**2** Paid reward systems in digital games should be regulated. Specifically, this should include:

**a) Purchase of chance-based items in digital games.** All loot boxes that can be bought with real world money should be age-restricted products for

people over the age of 18 only. To be clear, this includes blind loot boxes (where a player does not know the contents of a loot box until it has been purchased) and more recent versions of loot boxes that reveal the contents in advance of a purchase (e.g. preview packs).

**b) Design of chance-based mechanisms in digital games.** All chance-based mechanisms related to paid reward systems in digital games should have to undergo independent testing for fairness and compliance with the stated rules of the game.

**c) Paid-for in-game currency in digital games.** All in-game currency that can be purchased using real world money should be removed from digital games. In-game currency should be replaced with purchase prices given directly in a country's local currency e.g. pound sterling.

### **3 Game accounts, parental controls, and in-game purchasing systems should be standardised.**

This would help parents and carers to manage their child's gaming and in-game spending across different digital games and platforms. This is especially important given that parents and carers are not usually the main users of these systems.

### **4 Measures should be put in place to help players track and manage their spending in individual digital games and across platforms.**

This could include in-game spending trackers and spending limits imposed by the game publisher or platform or the implementation of self-exclusion measures meaning individual players can choose to opt-out of in-game spending.

### **5 A review of the Office of Fair Trading's (OFT) Principles for online and app-based digital games to specifically address children and young people's experiences of chance-based mechanisms in digital games.**

A review and ongoing monitoring work would be carried out by the Competition and Markets Authority (CMA).



# Introduction

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Paid reward systems in digital games, such as loot boxes, card packs, battle passes, and in-game currency used to purchase game-specific content, have been widely adopted in a range of digital games, enabled by the growth of internet-connected gaming. These models of revenue generation can take many forms, from free to play digital games that generate income via advertisements or in-game microtransactions, to premium video game console releases that offer players the opportunity to purchase additional content like characters, new game maps, skins, or weapon upgrades after they have paid upfront for the game.

The global digital games market is estimated to be worth a record \$176bn in 2021, with smartphone games having the largest market share of all revenue at 45% (\$79bn), followed by console games (28%, \$49bn), downloaded/boxed PC games (19%, \$33bn), tablet games (7%, \$12bn), and browser PC games (1%, \$3bn).<sup>1</sup> In 2020, a total of \$54bn was spent on in-game purchases.<sup>2</sup> Many digital games utilise chance-based mechanisms for in-game transactions. Commonly called loot boxes, card packs, or spins, these digital items give randomised rewards of uncertain value in exchange for in-game currency purchased with real world money. Their success is largely predicated upon the use of techniques borrowed from regulated gambling to engage players and encourage repeated use of these mechanisms.<sup>3</sup>

This is problematic. There are currently no specific regulations that govern these chance-based mechanisms in digital games in the UK, meaning that they can be, and are, accessed by children and young people (as well as other vulnerable consumers). While gambling is a highly regulated activity in the UK that is restricted to adults over the age of 18, digital games that contain these chance-based mechanisms are actively marketed and sold to children and young people under 18. This is because these mechanisms, and more specifically the items won, do not meet the legal definition of gambling. Items won are not considered to be ‘money or money’s worth’ – that is, they do not hold the same value as money. So, for example, players cannot cash out their winnings.

Over 90% of children in the UK play video games,<sup>4</sup> and the majority of these children play online, meaning they have access to internet-connected digital games. In fact, seven in ten children aged 5 to 15 played digital games online in 2020, spending an average of 1 hour 21 minutes playing digital games in a typical day.<sup>5</sup> The Gambling Commission’s Young People and Gambling

<sup>1</sup> Newzoo (2021), *Newzoo Global Games Market Report 2021*. Accessed 14.01.2022: <https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2021-free-version/>

<sup>2</sup> Statista (2021). *Global in-game consumer spending market value 2020-2025*. Accessed 14.01.2022: <https://www.statista.com/statistics/558952/in-game-consumer-spending-worldwide/>

<sup>3</sup> Griffiths, M.D. and King, R. (2015), Are mini-games within RuneScape gambling or gaming? *Gaming Law Review and Economics*, 19(9):640-643

<sup>4</sup> Children’s Commissioner for England (2019), *Gaming the System*. Accessed 1.02.2022. <https://www.childrenscommissioner.gov.uk/wp-content/uploads/2019/10/CCO-Gaming-the-System-2019.pdf>

<sup>5</sup> Ofcom (2021), *Children and parents: media use and attitudes report*. Accessed 1.02.2022 [https://www.ofcom.org.uk/\\_\\_data/assets/pdf\\_file/0025/217825/children-and-parents-media-use-and-attitudes-report-2020-21.pdf](https://www.ofcom.org.uk/__data/assets/pdf_file/0025/217825/children-and-parents-media-use-and-attitudes-report-2020-21.pdf)

Survey (2020) revealed that 59% of young people surveyed said they had heard of in-game items, of which 56% of young people had paid money to buy specific in-game items like skins, weapons, or players, and 40% had paid money to open loot boxes, packs, or chests to get in-game items like skins, weapons, or players.<sup>6</sup>

The Gambling Commission estimates that 25,000 children in the UK aged between 11 and 16 are problem gamblers, with many introduced to betting via computer games and social media.<sup>7</sup> Recent research found that young adults who purchase loot boxes are more likely to be gamblers and experience problem gambling than others.<sup>8</sup> This raises important questions about access to and design of these chance-based mechanisms in digital games and their regulation. Indeed, there have already been numerous calls for the Government to take immediate action under section 6 of the UK Gambling Act 2005 so that loot boxes are considered to be games of chance and therefore subject to regulation.<sup>9</sup> In response, the Department for Digital, Culture, Media and Sport (DCMS) launched a call for evidence in 2020 to understand the impact of loot boxes. In July 2022, DCMS published a response to the call for evidence.<sup>10</sup> This response stated that there would be no immediate change to the scope of gambling regulation to cover loot boxes. Similar debates have been ongoing in other countries, with some resulting in regulatory change.<sup>11</sup>

## The contribution this research makes

The research findings presented in this report are imperative because there is almost no qualitative data on how children and young people actually engage with paid reward systems, and even less about how these practices take place within the spaces of the home. This research therefore provides a unique insight into how children and young people think about, experience, and use chance-based mechanisms in digital games.

<sup>6</sup> Gambling Commission (2020), Young People and Gambling Survey. Accessed 2.02.2022. <https://www.gamblingcommission.gov.uk/statistics-and-research/publication/young-people-and-gambling-2020>

<sup>7</sup> Gambling Commission (2017), Young People and Gambling 2017. Accessed 14.02.22: <http://live-gamblecom.cloud.contensis.com/PDF/survey-data/Young-People-and-Gambling-2017-Report.pdf>

<sup>8</sup> Wardle, H. and Zendle, D. (2021) Loot boxes, gambling and problem gambling among young people: results from a cross-sectional online survey. *Cyberpsychology, Behavior, and Social Networking*, 24(4): 267-274. (doi: 10.1089/cyber.2020.0299)

<sup>9</sup> They include:

a) Department for Digital, Culture, Media and Sport (DCMS) report from their Immersive and Addictive Technologies Inquiry (2019) <https://publications.parliament.uk/pa/cm201719/cmselect/cmcmds/1846/1846.pdf>

b) Children's Commissioner for England's report on Gaming the System (2019) <https://www.childrenscommissioner.gov.uk/wp-content/uploads/2019/10/CCO-Gaming-the-System-2019.pdf>

c) House of Lords Select Committee report Gambling Harm – Time for Action (2020) <https://committees.parliament.uk/publications/1700/documents/16622/default/>

<sup>10</sup> Department for Culture, Media, and Society, 2022, Government response to the call for evidence on loot boxes in video games. Accessed 18.07.2022: <https://www.gov.uk/government/consultations/loot-boxes-in-video-games-call-for-evidence/outcome/government-response-to-the-call-for-evidence-on-loot-boxes-in-video-games#conclusions-and-next-steps>

<sup>11</sup> In Belgium, loot boxes meet the legislative definition of a game of chance and are not permitted in digital games. Netherlands and Slovakia also consider them to be gambling.



It also supplements and deepens previous research on loot boxes which often focuses on either a) defining their formal mechanisms, or b) quantitative reporting and analysis on the numbers of players purchasing loot boxes or the amount spent by players.

It is worth stating that while loot boxes and card packs may feel familiar as part of children's collectible culture, like the randomised nature of purchasing physical packs of football stickers or blind bags of plastic figures, there are striking differences with loot boxes. This includes the use of gambling style techniques, such as the use of affirmative animations and sounds to simulate 'a win' and the portrayal of 'near misses' when items won are revealed, which are not comparable to physical sticker packs or blind bags.

It is also important to note that whilst the original scope of the research was to investigate in-game chance-based mechanisms specifically, like loot boxes, it has been pertinent to look more broadly at paid rewards systems in their different forms (including chance-based mechanisms, in-game currencies, battle passes, and direct purchases) as well as investigating how these systems relate to the game itself and platform within which they are accessed (and how these come to bear on children and young people's purchasing decisions). There are two main reasons for this: a) paid reward systems feature prominently in how children and young people talk about their experiences of gaming and in-game purchases, and b) the speed at which the gaming industry can innovate and update digital games in a digital age of internet-connected gaming<sup>12</sup> might be used to circumvent any measures or regulations put in place now to mitigate potential harms from the particular mechanism of loot boxes.

<sup>12</sup> During the course of this research, Rocket League replaced their chance-based crates with blueprints in 2019. Blueprints allow players to view the contents of crates before they purchase them. Fortnite removed blind llamas from sale in 2019. FIFA 21 trialled preview packs which allowed players to see the contents of certain packs prior to purchase. These preview packs are now available in FIFA 22 alongside the original blind packs where players are unable to see their contents before purchasing.

# Key concepts

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## Digital items:

These are items that players can earn through gameplay or buy with real world money:

**a) Downloadable content (DLC):** Additional content created for a game that has already been released. It can be added to a game for free or offered to players at an extra cost.

**b) Emotes:** Expressions, dances, or actions a character can perform in a game.

**c) Skins:** Cosmetic items that change the appearance of a character or weapon.

## Free-to-play digital games

Digital games that are free to join and play, but may require players to pay to unlock further content or make in-game purchases to enhance gameplay or bypass repetitive tasks (e.g. grinding).

## Grinding

A term used to describe repetitive and often tedious tasks required by a player to advance in a game or to unlock specific content.

## Online gambling

It is important to distinguish between digital games that feature gambling-style mechanics and systems (like loot boxes), which this report focuses on, and online gambling. Online gambling (often called online gaming) includes casino-style digital games like slots, poker, and roulette. These digital games are regulated by the Gambling Commission in the UK and allow players to deposit, bet, and cash out real world money.

## Paid reward systems

We take a broad understanding here to encompass the following:

**a) Chance-based mechanisms, usually called loot boxes:** A loot box is a game of chance that contains a randomised selection of in-game items that are revealed after the loot box has been opened. Loot boxes have many different names, depending on the game: mystery boxes, card packs, eggs, bags, chests, spins, wishes, gifts, and cookie cutters. The wide range of names given to these chance-based mechanisms can make it difficult for parents, carers, and young people to recognise them as games of chance. Loot boxes can be earned in-game or bought with real world money. Items contained in loot boxes can include: cosmetic items (e.g. skins or emotes, that change the way your character or weapon looks in the game); power-ups (that give the player an in-game advantage); in-game currency; premium/event currency; or exclusive, time limited items. Rarer items are more difficult to find. For example, in FIFA 22, if players open a Premium Gold Players Pack, they are guaranteed to receive a Gold 75+ rated player, but have 77% chance of packing a Gold 82+ rated player, 11% chance of packing a Gold

86+ rated player, 6.1% chance of packing a special card such as Team of the Week Player, and less than 1% chance of packing a special card such as UCL Road to the Final Player. To open a Premium Gold Players pack, players need 25,000 FIFA Ultimate Team (FUT) coins (earned in-game) or 350 FIFA points (500 FIFA points can be bought for £3.99 through the in-game store).<sup>13</sup>

**b) Battle passes:** These items give players the opportunity to unlock new content by levelling up as they play the game and/or complete specific challenges. Battle passes last for a predetermined time (sometimes called a ‘season’), usually lasting between two and three months. Many digital games have a free version of the battle pass, which may have a limited number of levels and only basic items available to earn, and a paid-for version, which has more levels and premium or rarer items available to earn. Often players are given the opportunity to purchase levels to level up their battle pass and reach the content they really want.

**c) Season passes:** These are bundles that contain digital items like skins and in-game currency, and give the player instant access to new item releases, such as new characters or maps, as they are introduced to the game over a season.

**d) In-game currency:** Currency can be exchanged for in-game items or used to bypass parts of gameplay. Digital games usually contain at least two different forms of currency: a premium currency that can be bought with real world money; and a currency that can be earned through gameplay. Sometimes, different forms of currency can be used to buy the same in-game items, which can blur the distinction between earned and paid-for currency.

## Microtransactions:

A term given to payments that can be made in-game in exchange for digital items or access to additional content. Some in-game items available to purchase are not so ‘micro’. In Brawl Stars, a PEGI 7 rated free-to-play smartphone game, where players can team up for 3v3 or battle royale games, you can buy the premium currency of ‘gems’ in the following denominations: £1.79 for 30 gems, £4.49 for 80 gems, £8.99 for 170 gems, £17.99 for 360 gems, £44.99 for 950 gems, and £89.99 for 2000 gems. Gems can be exchanged for loot boxes (a big box is 30 gems and a mega box is 80 gems) and skins (skins can cost 29 gems or 79 gems).<sup>14</sup> This game was played by young people who took part in this research.

## Skins betting:

The use of in-game digital items like skins or in-game currency to gamble on games of chance via unlicensed third party websites. Not one child or young person who took part in our research had engaged in skins betting, although some were either aware of it or had viewed skins betting websites out of curiosity.

<sup>13</sup> FIFA 22 accessed on PS5. Pack probabilities and cost of FIFA points correct on 22.02.2022.

<sup>14</sup> Brawl Stars was accessed on an Android Smartphone and prices correct on 22.02.2022.

# Methodology

This report is based on original, in-depth qualitative research, including:

- Over 100 hours of video ethnography, conducted over multiple visits to the homes of 42 families from the North East of England between August 2019 and February 2022. These visits were conducted in-person before the pandemic, then later via online video calls. Children and young people who took part were between the ages of 5 and 17. Children and young people showed us the digital games they liked to play and talked about their experiences of gaming and in-game spending. We recorded actual gameplay using an Elgato capture device when we visited the family home. The sessions focused on why children and young people value gaming and the items they purchase in digital games, what money they spend and how much, and what they think about paid reward systems in digital games. We observed and talked about a variety of digital games on smartphones, consoles, and PC, including Apex Legends, Brawl Stars, Call of Duty, Coin Master, Cookie Run: Kingdom, CS:GO, FIFA, For Honour, Fortnite, Genshin Impact, Jurassic World Alive, Roblox, Rocket League, and WWE Supercard.
- In-depth interviews with 20 parents and carers of children and young people who spend money in digital games and have purchased loot boxes (or similar). These interviews explored how parents view their child's gaming and in-game purchases, how they understand paid reward systems in digital games, and what would help them navigate these systems with their children.
- In-depth interviews with 10 game designers who have experience of designing and developing digital games that contain paid reward systems. The focus here was to investigate how designers make decisions and how they understand the effects paid reward systems have on players.
- Detailed analysis of paid reward systems that feature in a range of digital games.
- The research was carried out according to Newcastle University and Loughborough University research ethics guidelines, with particular care taken to comply with participant consent, confidentiality, and data management. The research received full ethical clearance from both institutions. Guidelines for working with children and young people under the age of 18 were followed rigorously and each member of the project team received DBS clearance before beginning fieldwork.





# Key findings

Our research highlighted the lived experiences of children, young people, and their families, as they interacted with paid reward systems in the games they played, and how these practices took place in spaces of the home.

1

**In-game chance-based mechanisms, like loot boxes, can and do cause harm to children and young people, including forms of financial and emotional harm.**

This harm can take a number of forms, from overt forms of compulsive spending that causes financial stress, to more covert and subtle forms of emotional harm, where the random nature of loot boxes induce senses of shame, disappointment, and frustration. Such experiences were exacerbated by the fact that children and young people often have no understanding of how chance-based mechanisms actually work. Our research found children and young people often did not understand the mathematics of probability or how poor the odds of receiving rare and desirable items actually were.

**Specifically, these harms include:**

**a) Compulsive spending as players try to win a rare or desirable item, which can become unaffordable or create financial stress.** There were some young people who repeatedly bought loot boxes not only for their contents but also for the experience of opening them. Young people talked about the allure of the surprise and suspense of opening a loot box. Some young people told us how they spent more money than they had initially intended because they wanted ‘just one more go’ to get a particular item or open another loot box. We spoke to young people who spent their savings on loot boxes or used a parent’s credit card without permission. In these cases, purchasing loot boxes often led to arguments within the family home and a stress on family finances. One young person told the researchers how

he spent nearly £500 over a period of a month in a mobile card game by buying packs of random cards. He was trying to get higher rated players to help him progress on the in-game leaderboard and compete directly with players he watched on YouTube. At the peak, he was playing the game for six to seven hours a day. “As soon as I was getting better players, I wanted to get better and better and better and better, like, I couldn’t stop.”

**b) Senses of shame when players reflect on the amount they have spent trying to gain a rare item, even if they are successful.** Many young people found it difficult to recall how much money they had spent in-game and specifically on loot boxes. There is no standard way of tracking spending through digital

games or consoles. When players do reflect on their spending, they often recognise it as problematic. As one young person put it, “in my head I was like ‘stop’. My guts were saying ‘stop’. Everything was saying ‘stop’, but my brain wasn’t. My brain was like ‘keep opening’. It was hard. It was like when you’re addicted to something. [...]. It was hard to stop.”

**c) Senses of frustration and disappointment when players fail to gain desirable items.** A young person described this as “kind of like a torment in a way because it’s popping up legendary, epics, blues, and reds, and then you get like a blue in the end” (as he talks about the animation when opening a loot box and then receiving a common in-game item). Another participant described their disappointment as a “rage inside”. Many parents and carers reflected on the effect of gaming and in-game spending on their child’s behaviour and emotions during interviews. For one parent, they described their children as becoming insular and just wanting to play digital games constantly. They would become aggressive if they could not purchase an item they wanted or if they were asked to stop playing. Another parent told us how they had to take more control over their child’s access to gaming:

**“Well we are far stricter now than we have ever been and it’s been through experience. At the height, when they were demanding, it was affecting their personality. They became quite negative if they didn’t get what they wanted. They were getting quite negative and upset in the gameplay if it didn’t work out how they wanted. So we felt there were negative personality traits. So we cut back on purchasing.”**

## 2

**Children find it difficult to track their spending in digital games and fail to understand the value of money, creating inadequate conditions for making purchasing decisions.**

Many of the children and young people we spoke to found it difficult to remember how much money they had spent in-game, and they often underestimated the total amount spent. This often led to embarrassment or regret if it was possible to work out the actual amount spent. As previously stated, there is no standard way of tracking spending in a game or across platforms. As one young person put it in relation to their purchases in a premium console game; “In this game I wouldn’t say [I’ve spent] a lot... I don’t buy in large amounts, I just usually get like £3 [of in-game currency], something like that.” However, when their parent looked through email receipts it became clear that the young person had spent around £60 since the game was purchased two months before; a sum that the young person could not believe.

Many children and young people said that if they had known the total amount they had spent so far in a game, it would have made them think twice about



making another purchase. Some said they bought in-game items without really thinking about it because it was so quick and easy to do; others said they thought they would have used an item much more than they actually did and would have requested a refund if they had been able to. This was echoed by parents. One parent told us that digital items provided “very short-term gratification” for their children. They were an “instant fix,” satisfying a need for feedback, and then were quickly forgotten. A parent told us how easy it was for their child to spend money in-game: “Because it wasn’t a physical note in his hand or coins, it was easy to just click ‘ok, ok, ok’ [...] It’s easy to get carried away.” Another parent said about their son:

**“He’s not brilliant with his money in relation to online. We’ve had to put a lot of blocks on. He has to ask for permission because he literally just presses the button constantly. He had £120-£130 in his account, and literally, it’s gone.”**

We spoke to parents who were shocked when they reflected on how much their child had spent on in-game purchases, even when those purchases were made with explicit parental permission and authorisation. Often this was because purchases of small in-game currency bundles lulled them into thinking their child’s spending was minimal and controlled. One parent estimated that the family has spent £1,000 on in-game purchases for each of their three children over a two-year period. They said:

**“Because you think it’s a little bit here and a little bit there. It’s quite obscene really. Especially on items that make no difference to the game. [...] It’s quite shameful that we’ve spent that amount of money [on in-game items].”**

The form that in-game currency takes and how it can be purchased and spent is an important part of why parents, children and young people find it difficult to track spending in digital games. Specifically:

**a) In-game currency dissociates in-game transactions from their real world monetary value.**

This makes it difficult for children and young people to understand how much they are spending in each in-game transaction, assess value for money of a potential purchase, and therefore make adequate purchasing decisions. Because the purchase of in-game currency happens first, it limits the space available for children and young people to deliberate on how best to spend that in-game currency. Many children and young people told us that once they had purchased in-game currency and it was available to them in their account, they liked to spend it because it was there. As a result, they would spend in-game currency straight away until it was gone. Spending in-game currency as soon as it was available was especially significant for younger children, who did not yet have an adequate understanding of money’s value. When asked how much an in-game item cost in real world monetary terms, most children and young people were unable to tell the researchers intuitively; they had to make a currency conversion calculation, either working out-loud or by using a calculator.

**b) Digital games in which earned currency and paid-for currency can be exchanged for the same items can make it difficult for children and young people to understand cost and track in-game spending.** In a game like FIFA 22, it is possible to buy a card pack with paid-for in-game currency (FIFA points), sell those cards on the FIFA transfer market for FUT coins (that can also be earned in-game), and then directly exchange those coins for a specific player card. This makes tracing the monetary source of the final exchange very difficult, if not impossible.

**c) Children and young people often buy in-game currency in small increments, especially if they are spending pocket money.** Buying in small increments is usually the most expensive way to buy in-game currency. In turn, children and young people do not benefit from ‘best value’ offers on larger denominations of in-game currency. Furthermore, smaller purchases can easily add up and are difficult to track. In some digital games, like Roblox, it is possible to buy in-game currency in several different ways e.g. directly in the game, by purchasing a gift voucher, and by subscribing to a premium currency package. Each way gives the player a different denomination of currency for the same amount spent. Children and young people told us they found this confusing and unfair, and thought it hid the true cost of in-game currency and in-game items.

### **3 Digital items are highly alluring, desirable, and collectible to children and young people, which drives repeat purchasing.**

Loot boxes and other chance-based mechanisms in digital games do not currently meet the statutory definition of gambling. This is because the digital items won in loot boxes are not considered to be ‘money or money’s worth’. That is, these items are not valued as money or equivalent to money. However, it is clear that the contents of loot boxes and other in-game chance-based mechanisms are valued in a multitude of ways that drive their repeat purchase by children and young people. The statutory definition of winnings as ‘money or money’s worth’ fails to recognise how digital items are actually valued by children and young people and how this influences purchasing decisions and the potential for harm to occur. Specifically:

**a) Digital items have significant social currency.** The online gaming worlds that many children and young people enjoy are also important social hubs for them, especially during the winter months. Digital games are where children and young people meet friends after school and at weekends, play games together, and talk via their headsets, from bedrooms and living rooms. The purchase of digital items gives children and young people an opportunity to express themselves in the game. Many said they would not want others to see them using ‘default’ skins that come free with a game. The way a character or weapon looks is highly valued; it can communicate to others how long you have played the game, how skilled a player you are, and your interests and values. One young person said

**“Say you’re in a game with random people or your friends and you are the last person alive and it’s a really tense moment, you can just show off your really nice skin, keep playing, and everyone will get jealous of you.”**

**b) Digital items can provide an in-game advantage.** Some digital items directly affect gameplay. This can take the form of more powerful weapons, character power-ups, or the ability to speed-up or bypass certain parts of the game. Competing with others, and advancing in-game, is important for many children and young people. One young person told us how difficult it was to find a top rated card by grinding or opening free daily reward packs in the mobile card game he used to play. He wanted to compete with players who ranked highly on the in-game leaderboard.

**“You have to get the best cards you can. [...] I was getting bored of waiting [for the daily pack]. So I started spending money, cos I was getting bored.”**

Another young person told us how he bought levels to advance more quickly through the battle pass of one of his favourite digital games. He showed the researcher the leaderboard for his friends, and his name was number one. He whispered, “I feel like a king.”

**c) Digital items can have an aesthetic quality and collectability.** Some items are purely cosmetic, like character and weapon skins, or emotes and dances. Desirability based on the way a digital item looks is not solely a personal choice, but can also be influenced by friends, social influencers, and the online community of players. Children and young people described skins and emotes as stylish, fresh, funny, cute, creative, colourful, customisable, complex, artistic, and unusual, elaborating on why they are important to them. Some digital games utilise exclusive collaborations, for example Fortnite’s collaboration with the comic book publisher DC, which was particularly popular with the children and young people in this research. But, trends change and new items are released, which drives young people to spend more on chance-based mechanisms or direct purchases in the in-game store to secure the latest items or to complete a collection.

**d) Digital items have a rarity, which is enabled through systems of artificial scarcity.** Many in-game items are ordered by rarity, from common to epic or legendary. Rarity affects the availability of an item in the game. Rarer items are more difficult to find than common ones in loot boxes and rarer items are usually more expensive to buy outright in an in-game shop. There is nothing inherently rare about a digital item in any game. Nonetheless, rarity is manufactured by games companies by limiting access to particular items they think will be desirable. In turn, this artificial scarcity can serve to increase that items desirability and perceived value for players. For some children and young people, owning rare items is very important to them. They feel lucky to own rare items, and they are items they like to show to others.

**e) Digital items can have an exchange value.** In some digital games, it is possible to buy, sell, and trade digital items found in loot boxes with other players through marketplaces.<sup>15</sup> These can be game-specific, like FIFA’s Transfer Market where players can sell cards, place bids, and buy cards outright, to trading platforms that span multiple digital games like Steam’s Community Market.

<sup>15</sup> Unauthorised third party platforms also exist that offer players a way of trading with each other outside of the game. These platforms are usually not condoned by game developers and their use by players goes against the rules of most games.

## 4

### **The design of in-game paid reward systems borrows techniques from regulated gambling to entice players to engage for longer in digital games and spend more money.**

There are clear parallels between the visual and auditory design of chance-based mechanisms in digital games and the design of regulated gambling machines and systems. For example, we encountered slots and spinning wheels in many digital games played by children and young people as part of our empirical research. Many of these gambling-style mechanisms portray ‘near misses’, where the game gives the player the illusion that they have just missed out on an item – an item typically of a higher rarity or value in the game. We know that for some children and young people, this led them to spend more money on loot boxes in the game than they had initially intended.

Some loot box animations use flashing lights and affirming sounds to convey a win, even in the absence of an actual win (that is, the receipt of an item of value as perceived by children and young people in our research). Affirmative animations and sounds had the effect of stimulating feelings of excitement and suspense, which children told us they enjoyed and often wanted to experience again and again until they received something of real value to them. There are some loot box animations that change and become more elaborate when an item of a higher rarity or value has been won. A few children and young people told us how they would keep opening loot boxes in the hope that they will experience such an animation; it was not just about the item won, but the feelings of surprise and delight when they were able to experience the ‘winning’ animation first-hand.

In the case of free-to-play digital games, game designers told us how important it was for players to log in every day, as this increased the likelihood of the player spending money. We found that many digital games incentivised this behaviour, offering free daily rewards (often in the form of free spins, loot boxes, or in-game currency). One young person told us how he would log in to his favourite mobile game every morning to receive the free card pack. But after a while, when he was no longer gaining any valuable cards from the free pack, and he had lost patience waiting for the next free pack, he started to buy them. This young person then spent almost £500 on card packs over a month.

## 5

### **Internet-connected digital games are enlivened by a range of temporal rhythms that influence purchasing decisions and manipulate spending patterns in children and young people.**

Many of the digital games enjoyed by children and young people have no end point; they are continuous games, based on core loops, where players perform similar actions or tasks over and over again. For example, the core loop in Adopt Me!, a popular mini-game on the Roblox platform, requires players to purchase eggs (operated by a chance-based mechanism), nurture and hatch those eggs, and raise animals. In Fortnite's Battle Royale mode, the core loop is to find an opponent, shoot them, and take their loot. These digital games rely on different temporal modes to enliven them, draw in players, keep them playing, and draw them back again.

We found that children and young people (and, by extension, their families) often synchronised life activities around gaming because of these temporal modes. For example, waking early or staying up late and missing sleep to participate in an in-game event, or delaying mealtimes so they could play a game at a particular time. Although there was limited evidence that altering schedules to fit in-game events or play with friends caused significant harm for the young people in our research, it was clear that real world activities were regularly disrupted or managed to fit the temporalities of the game they were playing, often affecting family life. This was acceptable to young people. 'Being present' and meeting an in-game obligation was important to them. One parent said,

**“I felt like the game was dictating when they would come down for tea, or do something that I asked, or go out. It causes that ill feeling within the house, a few arguments.”**

Temporal modes in digital games, such as the timing and length of events and seasons also have consequences for in-game purchases; we found they were very effective at manipulating how children and young people made purchasing decisions and justified them. Specifically, these temporal modes include:

**a) Persistent time.** Many digital games are always on, even when you are not online or playing the game itself. The top-grossing smartphone game Coin Master is an interesting example here. It is a social casino game that brings together a slot machine experience with core social elements: you can raid and attack other players' villages (including the villages of real world friends if connected via the game), and build and upgrade your own village. The fear of having your coins raided or your village attacked is what drives players back to the game – and also to spend. For example, you can protect your village from attack while you are away by feeding and upgrading your pet rhino. This can be done by purchasing pet food and experience points or by grinding (but this takes time). These purchases are driven by this persistent pressure – that your time, hard work, and possibly money already invested in the game – is at risk.

**b) Limited time.** This prompts players to act now – or miss out. Limited time is often seen in in-game item shops, with countdown clocks and stickers marking digital items with 'introductory offers', 'last chance' to buy, or 'limited edition'. Creating narrow temporal windows in which items are available is a very effective technique to persuade children and young people to purchase these items. In turn, the limited time nature of items or loot boxes also often influenced parents to agree to these purchases. One parent recalled a conversation they had with their children many times:

**“Quite often, even if I'm at work, I'll get a text message, 'Can I have some FIFA points?' 'No.' 'Why?' 'It's a waste of money.' 'No it's not. But there's a special pack on that you can only get today or you've got to get it by Friday, it's only out now, it's limited edition.' So I eventually go back, 'Well if you want to, but it's your money this time.'”**

One parent told us that the time-limited availability of an item is one of the main factors they consider when giving permission to their child to make a purchase; if a digital item is unlikely to be available for long, they will buy it for their son. For example, in Fortnite, the item shop is refreshed daily, with new products added, and existing products cycled, but players do not know for how long items will remain or if they will ever return. As one young person said, “you just don’t know when it’ll be back, so if you want it, you buy it.”

**c) Social time.** Many digital games embed social gaming through leaderboards and team challenges that need to be completed within a set time to win rewards. These leaderboards and challenges can put pressure on young people to spend, especially where it is possible to advance gameplay through in-game purchases. Here purchases can be driven by both a desire to compete and progress and a sense of social obligation as children and young people did not want to compromise real world relationships by failing to help friends complete and win challenges.

**d) Seasonal time.** Seasons help to punctuate the continuous loops of many internet-connected digital games, drawing players back in, and shaping regular interaction. Many young people told us that their pattern of spending often mirrored seasons; with new digital content to explore, and new digital items to purchase. With each yearly game release of FIFA, the game restarts afresh: coins and player cards are non-transferable. We found some children and young people actually liked this, even though it meant their monetary investment in the previous version of FIFA was made redundant. They enjoyed the challenge of starting again and building their team by buying new packs and earning coins.

Battle passes, used in digital games such as Fortnite, also produce a sense of seasonal time, where players work to unlock exclusive items that are only available within the season’s time limit (often between two and three months). Seasons are regularly punctuated by in-season events. These shorter, time-limited happenings (perhaps a day or a week) encourage players to be co-present online or intensify their engagement with the game. As a temporal mode utilised in many digital games, seasons encouraged children and young people to play more often, which in turn increased the likelihood they would spend money in the game.

**6**

**Parents feel stuck in a vulnerable position, wanting to safeguard their children from potential harm when they spend in digital games, while tolerating their access to gaming because of the social benefits.**



Most parents thought chance-based mechanisms in digital games, like loot boxes and card packs, were gambling products. This was largely due to the behaviours they observed in their children, such as repeat and compulsive purchasing of loot boxes and the range of emotional responses their purchasing provoked (such as excitement, surprise, anger and, regret). Many parents expressed concern about the impact of loot box purchases on children's cognitive and emotional development and questioned whether in-game chance-based mechanics would act as a gateway to other forms of gambling in the future. One parent described her son as being 'addicted' to opening card packs in FIFA. In their words, they said,

**“I do get concerned with the little one because he's quite happy to spend that amount of money opening something where he doesn't know what he's going to get. And you do worry, because it's a gamble isn't it, and is that a trait in him, because he's quite happy to take that risk, and when he gets older, is he going to move on to something else?”**

Despite these concerns, parents regularly tolerate loot boxes and chance-based mechanisms as part of their child's gaming and often feel powerless to do anything about these mechanisms. Parents' sense of powerlessness was often expressed through the following themes.

**a) Cost.** Parents said they felt their children were being exploited and ripped off by game developers. They said the cost of digital items were too high and lacked consistency in pricing between digital games. There was concern over the blurring of different monetisation models. For example, premium digital games that are paid for upfront but include microtransactions that are central to the game were deemed particularly problematic.

**b) Access.** Parental control systems in digital games and payment systems can themselves cause frictions that make it difficult for parents to adequately control children's spending in digital games. Parents are not usually the main users of their children's phones or game consoles and so find it difficult to keep track of registered emails, passwords, registered devices, and registered payment cards. Keeping track of control systems and spending is especially difficult when a child plays across multiple gaming accounts and where siblings are involved. Some parents told us they removed parental controls because they had stopped working, were too complicated, or were preventing legitimate transactions being made.

**c) Social gaming, peer pressure, and fear of missing out.** Parents acknowledged that gaming brings real benefits to children and young people, especially helping them to maintain social relationships. However, the maintenance of social relationships is also what motivated a lot of children and young people's spending, with perceived pressure to purchase cosmetic items and gameplay enhancements to bond and compete with friends. One parent commented that their child not having access to specific in-game items had led to bullying issues.



# 7

## **A manipulation of the gaming experience creates unfavourable conditions for making purchasing decisions, especially for children and young people.**

It was evident that individual game designers have moral quandaries about certain aspects of game design, especially in relation to monetisation. However, these game design decisions are often out of their control. In many cases, the use of certain techniques have become essential to meet player retention and monetisation objectives as set by the games development studio or games publisher. For example, game designers can manipulate a player's wins and losses, create illusions of real people competing to climb leaderboards, and control what odds a player receives when they open chance-based items in digital games. The manipulation of such factors is especially the case for free to play digital games, where the game developer can carefully balance the player's experience of the game to encourage them to spend money. As one game designer told us, "You nearly won, that was key to the philosophy of a good level," because that experience would prompt players to spend money on chests or special boosters or extra lives as they had been 'so close' to completing a level. Another designer told us how creating player 'stress' is an important tool in their work. If players feel stressed or time-pressured and want to complete part of the game, they are more likely to spend money in the game.

Whilst it is accepted that there will be some use of illusion to create an entertaining and engaging gaming experience, this becomes problematic when illusion is used to lead players to spend money in digital games which they otherwise would not do, especially when those players are children and young people or other vulnerable consumers. As one game designer told us:

**"Anything which is controlled by the system can be rigged. Like I said, we as designers rigged the moment where you would lose a game. We rigged it on purpose so the feeling that you have is like I almost won. So anything which... has a fixed rule or fixed rules...can be altered from behind the scenes."**

Another game designer said:

**"Where it becomes a little murkier is the more aggressive side of things, things that are more targeted towards kids and they're all built with this incredibly addictive secret sauce that keeps players coming back, and... [we]...can put up barriers to progress that you don't even know are there."**

These barriers include the implementation of dynamic odds for in-game chance-based mechanisms, where the odds change as a player spends more money, but the details of this change to odds are withheld from the player. Such mechanisms and techniques are unlike those used in the regulated gambling industry, where gambling products undergo independent testing for fairness and compliance with the stated rules of the game.



# Conclusions and Recommendations

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## Our conclusions

### **1** **Loot boxes have to be understood within the context of the broader systems, digital games, and platforms in which they operate.**

The relationship between the use of in-game chance-based mechanisms like loot boxes and other related parts such as in-game currency, leaderboards, avatars and characters, marketplaces, in-game item shops, inventories, payment systems, and parental controls, cannot be disentangled. They all come to bear on children and young people's access to loot boxes, their desire to purchase them, and their purchasing decisions.

### **2** **Gaming, and in-game item purchasing, is intertwined in children and young people's lives more than ever before.**

The social currency of digital items in digital games makes these items very powerful and enticing for children and young people. The social currency of items creates conditions for impulsive decision making about purchasing, meaning young people often spend more money than they initially intend. Children and young people are also easily influenced by friends and online gamers, lose track of their spending over time, find it difficult to convert in-game currency into real world money (and vice versa), do not always understand the meaning of odds relating to chance-based mechanisms, and often regret purchases they have made.

### **3** **Children's gaming is a conflicted reality for parents and carers.**

The perception of the social acceptability of in-game chance-based mechanisms and the direct purchase of in-game items (i.e. the fact that children and young

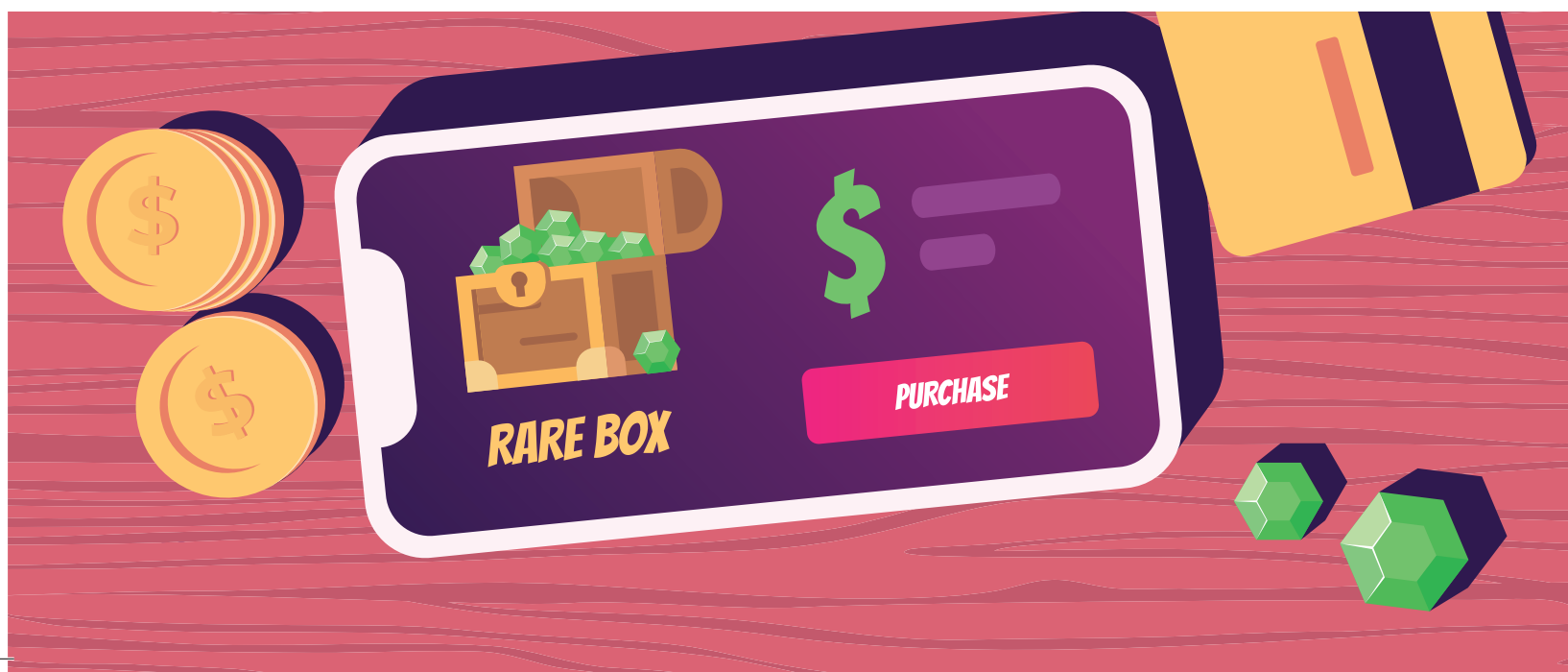
people are given permission by parents to purchase them) hides the conflicted reality of children's gaming for parents and carers. The majority of parents and carers who participated in the research viewed loot boxes as gambling and expressed concerns about longer-term effects on their children's attitudes towards gambling. However, at the same time, parents and carers tolerated their children's use of in-game items and chance-based mechanisms because of how socially embedded gaming has become.

## **4 Parental and carer control and payment systems are inadequate.**

Many parents and carers have to manage multiple gaming accounts and passwords, multiple gaming devices, and different payment accounts. Parents and carers are not usually the main users of these systems, leading to frictions that cause additional pressures and confusion. Sometimes this leads parents and carers to remove parental controls altogether, because they find them so difficult to navigate and manage. There is no standard, joined-up way of controlling children's access to gaming and in-game spending.

## **5 Regulation needs to go further than loot boxes.**

Regulation of chance-based mechanisms and paid reward systems in digital games is not just about loot boxes. Given the valuation of all digital items in digital games by children and young people (including their desirability and collectability), and the deliberate but hidden manipulation of the gaming experience, regulation should include other paid reward systems in digital games, such as in-game currency and direct purchasing. Regulation of these broader systems would help to minimise potential harm for children, young people, and other vulnerable groups, in relation to in-game spending.



## Our recommendations:

### **1 The gaming industry should have its own independent regulator.**

Given the range, reach, and complexity of paid reward systems in digital games, the manipulation of the gaming experience for the purpose of increasing player spending in-game, and the speed at which the industry can innovate, there should be a new independent regulator for the gaming industry. The regulator would be responsible for ensuring that gaming is fair and safe for all players and their families.

### **2 Paid reward systems in digital games should be regulated.**

New regulation should control how paid reward systems are implemented in digital games in order to minimise potential harms caused to children, young people, and their families. These regulations should cover:

- a) Purchase of chance-based items in digital games.** All loot boxes that can be bought with real world money should be age-restricted products for people over 18 only. To be clear, chance-based mechanisms include blind loot boxes (where a player does not know the contents of a loot box until it has been purchased) and more recent versions of loot boxes that reveal the contents in advance of a purchase (e.g. preview packs).
- b) Design of chance-based mechanisms in digital games.** All chance-based mechanisms in digital games should have to undergo independent testing for fairness and compliance with the stated rules of the game.
- c) Paid-for in-game currency in digital games.** All in-game currency that can be purchased using real world money should be removed from digital games. In-game currency should be replaced with purchase prices given directly in a country's local currency e.g. pound sterling.

### **3 Game accounts, parental controls, and in-game purchasing systems should be standardised.**

A standardisation of purchasing and control systems in digital games would help parents to manage their child's gaming and in-game spending across different

digital games and platforms. Standardisation of game accounts, parental controls, and in-game purchasing systems is especially important given that parents are not usually the main user of these systems.

## **4 Measures should be put in place to help players track and manage their spending in individual digital games and across platforms.**

Measures to track and manage spending could include:

- a)** In-game and/or cross-platform spending trackers.
- b)** Spending limits or self-exclusion measures so players can opt-out of in-game spending. These limits and exclusions should be cross-platform in order to be effective. The gambling industry in the UK provides an example of how such measures could be incorporated into digital games.

## **5 A review of the Office of Fair Trading's (OFT) Principles for online and app-based games to specifically address children and young people's experiences of chance-based mechanisms in digital games.**

Given that the OFT is no longer in existence, this review should be undertaken by the Competition and Markets Authority (CMA). The CMA should also carry out ongoing monitoring activity of chance-based mechanisms in digital games in order to safeguard children and young people.

