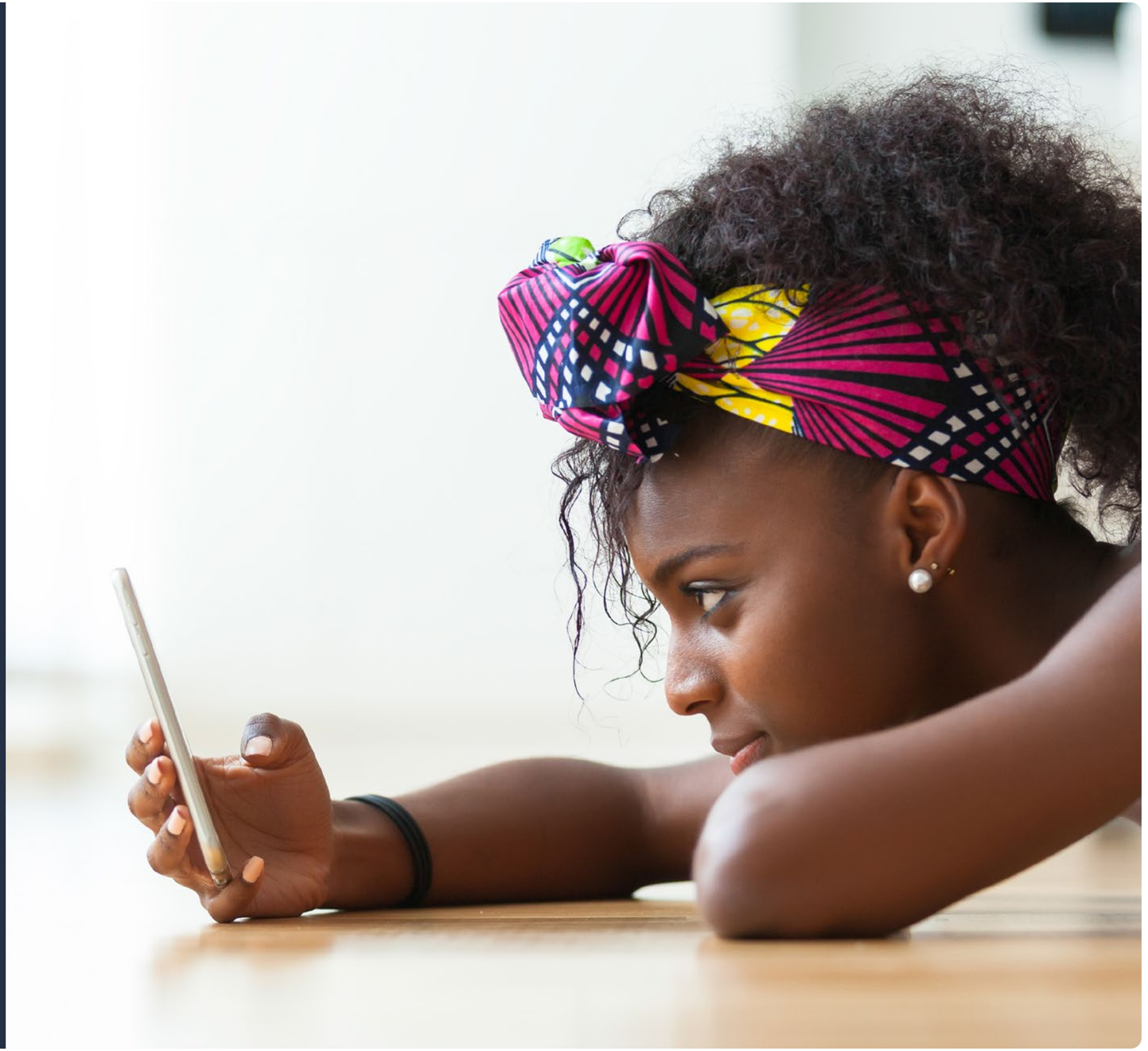
Children's Wellbeing in a Digital World

Index Report 2022

internet matters.org

Developed with the University of Leicester and Revealing Reality



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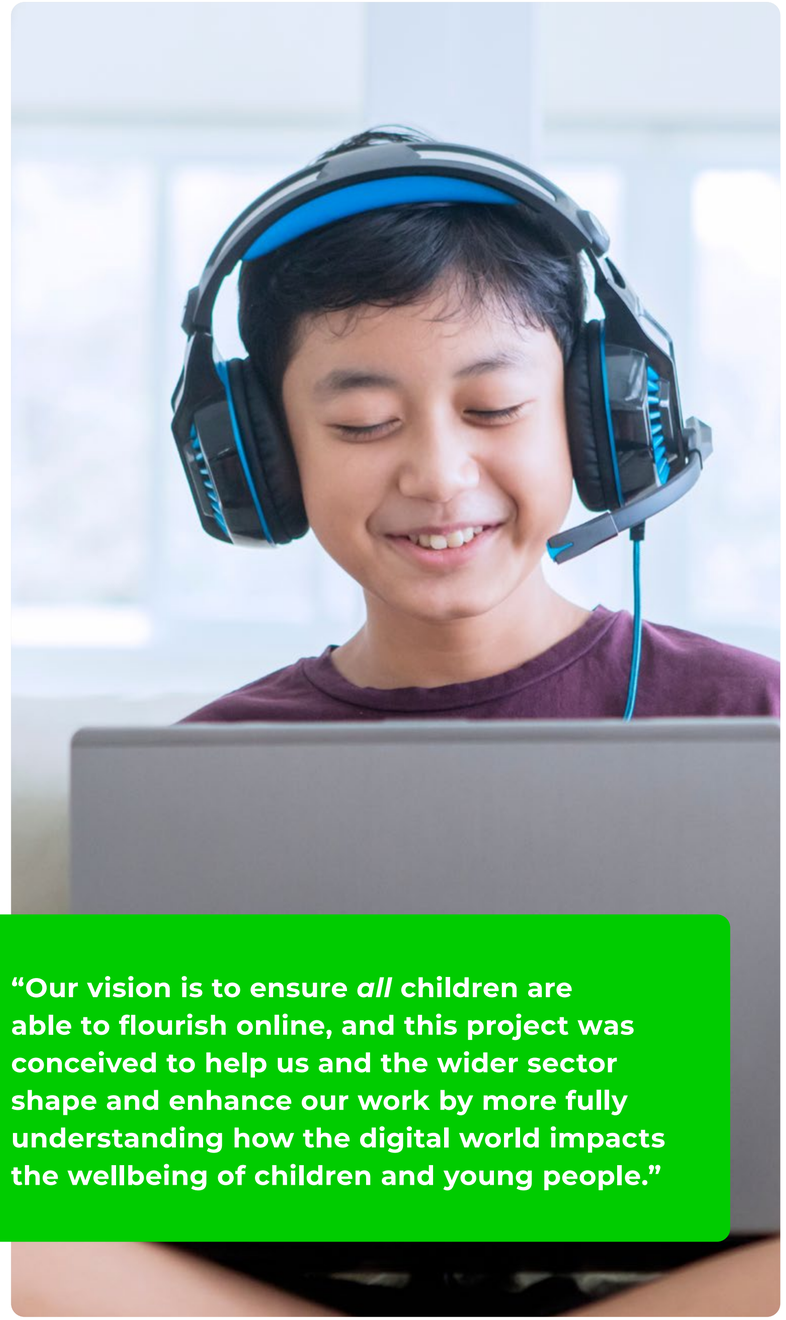


"Our vision is to ensure *all* children are able to flourish online, and this project was conceived to help us and the wider sector shape and enhance our work by more fully understanding how the digital world impacts the wellbeing of children and young people."

Foreword from Internet Matters

Since our launch in 2014, we've witnessed a huge rise in digital usage amongst children and young people. The age at which they start to use and own devices is getting younger, the time they spend online is getting longer and the type and amount of activities they pursue grows every year with the launch of more platforms, apps and games.

We know this is having a significant impact on their lives, playing a major role in shaping their behaviour and experiences. At Internet Matters, our role in supporting parents, carers and professionals to navigate the rapidly changing online world has been primarily focused on managing the risks posed by connected technology. In recent years our work has shown us that these risks are not evenly spread, with the most vulnerable children being significantly more likely to experience harm.

However, there are also huge opportunities for positive impact. Being online allows children to connect, learn, create and be inspired. The Covid-19 pandemic has brought all of these benefits to the fore, giving children the ability to maintain relationships and support their education in ways which would not have been possible otherwise. It has also shown us that those without sufficient access and support to engage online have been severely disadvantaged.

Our vision is to ensure *all* children are able to flourish online, and this project was conceived to help us and the wider sector shape and enhance our work. To do this, we must be able to measure the effects of being online on children and young people:

- Who is experiencing the most positive outcomes and what do these look like?
- Who is suffering the worst negative impacts and where are the inequalities?
- How is this picture changing over time?

We first needed to define what being 'well' in a digital world actually looks like and commissioned Dr Diane Levine and team at the University of Leicester to help us create this definition. The subsequent report was created following consultation with those closest to the issue, including representatives across education, industry, policy, the academy, media and third sector. 'Children and families' wellbeing in a digital world' identifies four dimensions of wellbeing (developmental, emotional, physical and social) which are most impacted by digital participation and considers both the positive and negative outcomes for each.

Revealing Reality have taken this framework and through a robust research process created the first index focused specifically on the impact of the digital world on wellbeing for children and young people in the UK. It has provided us with a large, unique data set that links together the thoughts and perceptions of parents and children within the same household.

The insights will guide our programme of work over the coming months and years. They offer wide benefits not just in understanding how we can better support families, but also have implications for policy, practice and digital product development as work continues on the Online Safety Bill and Media Literacy Strategy. We are excited to be able to share this work and an initial set of observations and recommendations. We are equally excited about the opportunities this offers to collaborate and start to use the data to make a material difference to the digital lives of families across the UK.

Summary

This report presents the development of an index designed to measure the impact of digital technology on the wellbeing of children. This is the first index specifically focused on wellbeing outcomes as a result of digital participation and is the culmination of a year-long project. The index provides a benchmark which can now be tracked year on year and compared across different groups of children in the UK.

One thousand children and their parents completed the index questionnaire in autumn 2021 and the findings reveal striking differences between children of different ages, genders, and demographic backgrounds across four key dimensions of wellbeing. They also demonstrate that the amount of time children spend online, and crucially *how* they spend that time, also shapes how digital technology impacts their wellbeing.

85% of children felt technology was very or fairly important for them staying in contact with friends or family they otherwise wouldn't be able to

Analysis of the data and subsequent index scoring shows:

As children get older and spend more time with digital technology, they experience more of the positives *and* more of the negative impacts on wellbeing.

Across the sample, those that use digital the least report significantly lower positive and negative impacts than those that use digital the most. Simply, children who spend less time online have fewer opportunities for it to impact them both for the good and the bad.

While displaying positive impacts, greater social media use was associated with increased negative impacts on social wellbeing – particularly for girls.

The youngest girls responding to the survey (9–10-year-olds) reported significantly lower scores for the negative social wellbeing dimension compared to girls in the older age groups (11-12, 13-14 and 15-year-olds), seemingly as a result of spending far less time on social media. However, those spending less time on social media also experienced less of the positive impacts on wellbeing.

Greater time spent gaming was associated with increased negative impact on developmental and physical wellbeing - particularly for boys.

Those who report spending the most time playing video games relative to others score significantly higher for negative developmental wellbeing (relating to feeling a lack of control of their digital behaviour) and negative physical wellbeing (missing out on physical activity). Compared to girls, boys scored significantly higher on these factors, underlining the importance of managing time spent in game play to achieve a healthy balance of on and offline activities.

Vulnerable children experience more of the negative impacts of digital technology on wellbeing than their less vulnerable peers.

However, vulnerable children also scored slightly higher on the positive emotional dimension – relating to feeling good about themselves as a result of their digital behaviour.

Children and their parents are broadly aligned on how digital activity affects them, but having a supportive environment appears critical.

Children whose answers differed most from their parents' perceptions of their online experiences scored lower on all positive dimensions.

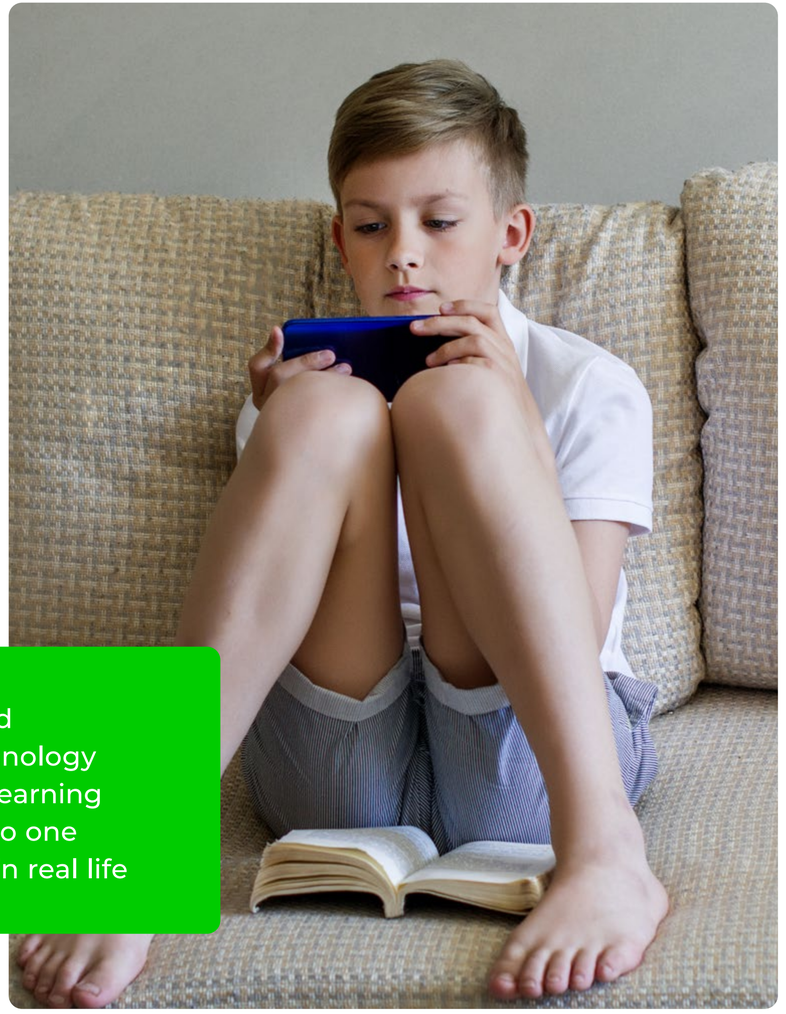
Children who reported that their parents/guardians 'go on their phones when [I am] trying to talk to them' all the time or quite a lot, reported significantly higher scores on the negative factors across all dimensions.

The findings suggest that the index is successfully tapping into important trends and issues in the lives of young people. It crucially shows that what children do online can shape whether their wellbeing is positively or negatively impacted. It also clearly shows that parental engagement in children's digital activity plays a key role.

The aim of this report is to educate on how the index was created, what the data is telling us at a macro level and explore opportunities for how it may be used across the wider sector, and in industry, education and policy. This work will immediately support Internet Matters to develop and enhance their resources for families. Further analysis of this broad data set will allow a deeper exploration of how parents can and are having an impact on wellbeing outcomes and expand on the insights for vulnerable groups.

In years to come the index will be able to demonstrate whether these trends are changing, whether efforts to improve wellbeing in a digital world are working, and support decision makers in identifying the best opportunities to support children with life online.

75% of children surveyed answered that technology was important for learning about things that no one would teach them in real life



Introduction and Methodology

There are so many elements that make up children's experiences of the digital world that it can be difficult to unpick the ways in which they affect children, both positively and negatively, or how they inevitably alter over time as the digital world in which they exist changes around them.

As a means of capturing this complexity, understanding the detail but also providing a tool to measure and compare, Revealing Reality was commissioned by Internet Matters to develop an index for understanding and tracking over time the impact of digital technology on children's wellbeing – or 'wellbeing in a digital world'.

Why an index?

Unlike a conventional survey, which provides a single snapshot of experience or views, an index unlocks the ability to compare the impact of digital technology on different elements of wellbeing in aggregate, and to see how these impacts change over time.

The index takes a wide range of components collectively and can therefore reveal trends at a population level:

- Who is benefitting the most, and who is benefitting the least?
- What areas of wellbeing are changing year on year, and which remain the same?

These findings can point to important opportunities to support all children to flourish in a digital world, and are relevant for those who create digital products, set the policy agenda through to those that support, educate or parent children.

Building on four key dimensions of wellbeing in a digital world

The index is rooted in four key dimensions identified as the areas of life where digital technology can have the most impact (both positive and negative) on children's wellbeing, as reported in 'Children and families' wellbeing in a digital world' written by Dr Diane Levine and team at the University of Leicester.

These four dimensions are:

- **Developmental wellbeing** – realisation of cognitive capabilities and achievement of educational potential; managing financial responsibilities that come with maturation; personal growth.
- **Emotional wellbeing** – healthy emotional development; ability to cope with stress and setbacks; spiritual development; development of thoughtful values and a positive outlook; space and opportunities to flourish; life purpose; autonomy; feeling successful.
- **Physical wellbeing** – achievement and maintenance of healthy thriving; development of physical capabilities; using technology in physical safety; access/lack of access to supportive or accessibility technologies.
- **Social wellbeing** – participation in wider communities including schools, clubs or societies; being an active citizen; ability to work with others; healthy interaction with online communities; maintenance of positive and sustainable online personae; managing the risks of grooming and exploitation; development and maintenance of good relations with significant people both online and offline; communication with people we know.

Of course, these areas of wellbeing overlap and interact. A child facing challenges with their physical wellbeing may also be likely to have challenges with emotional or social wellbeing as a result. Activities in everyday life both on and offline will impact all these aspects of wellbeing – school, socialising with friends, family life.

To help unpack some of this complexity, we spent half a day with ten families across the UK, talking to them about their experiences with digital technology, observing how it fits into everyday life, exploring how it shapes children's wellbeing.

We explored both the **positive** and **negative** impacts of digital technology on their wellbeing across each dimension. At the same time, we tested different ways of asking families about their digital experiences, to establish the best ways to capture and measure their impact, both now and in future years.

What can we measure in an index?

We saw that some elements of each dimension manifested more clearly and were more measurable in the lives of children than others.

For example, Dr Levine's report highlights how online experiences and interactions can affect **developmental** wellbeing (see right).

When exploring with families how digital technology negatively impacted children's **developmental** wellbeing, we saw that some areas like the impact of misinformation or fake news were incredibly nebulous and hard to measure. Children and parents alike struggle to know what is true and what is not online, making their self-reported impact of it hard to interpret clearly.

On the other hand, many children were able to clearly articulate feelings of being out of control of their own digital behaviours, and the negative impact this had on them – for example through 'wasting' lots of time consuming content that was repetitive or uninteresting.

The index prioritises measures that appeared to be the most accurate and valid during this testing, which means there are some areas it does not (and would probably always struggle to) measure meaningfully.

Both positive and negative impacts

We also saw that children could simultaneously experience positive and negative impacts of digital technology on dimensions of wellbeing.

For example, social media was often being used to arrange face to face interactions between friends or keep people connected over long distances. However, the same child might report that they found themselves staying at home scrolling through social media instead of seeing their friends in person, suggesting that social media was having a negative impact on their social wellbeing.

For this reason, the index reports both the positive and negative impacts of digital technology independently, without amalgamating them, as this could 'flatten out' and obscure these patterns.

Developmental wellbeing

To develop well in a digital world, you can benefit from: opportunities for learning new skills and developing a sense of wonder; opportunities to develop thinking, collaboration, organisation and problem-solving skills; opportunities to bring together content to offer to others; access to new information and online learning including gaining qualifications; exposure to alternative opinions and world-views and examples of mature rational discussion; secure understanding of how data are used; and the digital skills, confidence and competence for everyday tasks and roles in daily life (including work, homework, household administration and financial management). For some, technology can even provide an income stream, for example through the safe monetisation of digital platforms.

You will need to manage the risks from: exposure to disinformation; fake news; fallacies and conspiracy theories; living in an echo-chamber; wasting or missing opportunities to learn; seeing examples of unhelpful and irrational thinking; cybersecurity challenges such as managing personal data online; challenges to financial wellbeing such as exposure to the varied and subtle ways that online games take money from players, sometimes in tiny but repeated payments.

The role of family and parental support

The index covers both parents' and children's experiences with digital technology, as the aim is to understand how wellbeing in the digital world manifests in **families**. Ultimately, the children's wellbeing is what we are aiming to understand, in recognition that this is shaped by the experiences and behaviours of the whole household.

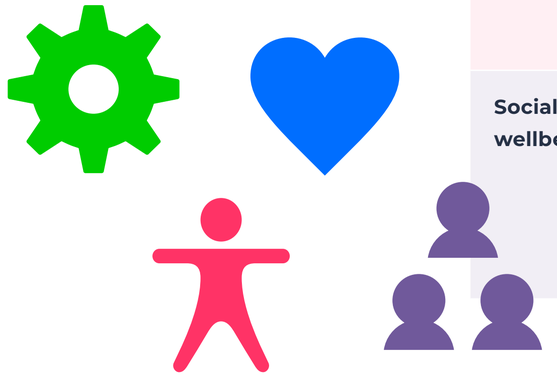
During the qualitative research it was immediately evident that family life and parental behaviour plays a key role in the impact of digital technology on wellbeing.

Some parents were having regular conversations with their children about navigating the online world, others were more distant or disengaged from their children's online lives. In particular, we saw that parents who seemed to know more about what their children did online tended to have children who felt more confident in gaining the benefits and avoiding risks online.

For this reason, alongside the index dimensions, we have explored the degree of 'alignment' or matching/mismatching between survey answers from children and answers from parents in the same household – so we can explore the role of this 'alignment'.

Using these insights, hundreds of question items of different variations were tested with families to see which were able to measure the impact of digital technology on wellbeing. A prioritised set of over 130 items were included in our survey.

The children's and parent's answers to the survey questions were reviewed and analysed. A subsample of items that appeared to be the most successful in measuring a well-rounded picture of how digital technology impacted wellbeing (how this was assessed is explained in Appendix 1) were selected and grouped under the four dimensions of digital wellbeing.



Developmental wellbeing	**Positive** items focus on whether children have been able to use digital tools to their advantage, enabling them to discover, learn and develop **Negative** items focus on the extent to which children appear to be experiencing a lack of control over how they use digital technology, where it generates behaviour that has no obvious benefit or pay-off for the child
Emotional wellbeing	**Positive** items focus on the positive influence digital technology can have on how children feel about themselves and the positive emotions it elicits **Negative** items focus on the negative emotional reactions or experiences that use of digital technology can produce in children
Physical wellbeing	**Positive** items focus on the use of digital technology to facilitate physical activity by enabling children to learn and develop their knowledge and skills **Negative** items focus on the opportunity costs and negative consequences that over-use of digital technology can have on physical health and activity, such as preventing children from engaging in sports/exercise or impacting their sleep
Social wellbeing	**Positive** items focus on the role that digital technology can play in enabling children to remain connected to others or form new, valuable connections, particularly in circumstances where this might otherwise not be possible or as feasible **Negative** items focus on the negative consequences that can arise from social interaction online

This report presents findings from year one of the index

The survey provided a rich and detailed data set on how digital technology is impacting the wellbeing of children in the UK.

This report presents the findings from that dataset, exploring the differences between different groups of children (older and younger, girls and boys, more or less vulnerable), as well as children who use digital in different ways (e.g., those who game, those who use social media).

The findings shows that not only how much time children spend online, but crucially what they do online, can shape whether their wellbeing is positively or negatively impacted. It shows that children who may lack support on digital issues at home experience the impacts of digital differently to their peers.

By looking at the data across children at key milestones and life stages (from age nine through to 15), we can see how their relationship with digital technology changes, and how it's impact on their wellbeing grows as it becomes a more integral part of their lives – both positively and negatively.

Over time, the index will be able to demonstrate whether these trends are changing, whether efforts and interventions to improve wellbeing are successful or not, and help identify the best opportunities to support children and their families in an ever-changing digital world.

69% of parents say they look for things online for their child to do that have educational value or feed their curiosity

Who we surveyed:

The survey was completed by 1,000 children aged 9-15, and one of their parents/guardians, totalling 2,000 responses. The sample was stratified by age and gender of the child, with approximately 140 children of each age, with equal numbers of boys and girls.

We did not apply quotas to the sample of parents, surveying slightly more female parents/guardians than male: 551 to 450.

The survey items were reviewed and an initial Factor Analysis conducted. There was significant overlap in the themes identified in Factor Analysis and the positive and negative poles of the four wellbeing dimensions.

How scores were developed for each positive and negative dimension:

- Each of the eight groupings (four dimensions with a positive and negative group) is represented by between two and seven survey items (please see Appendix 2 for detail on all items used).
- Each item was scored out of three based on the strength of an individual respondent's answer. For example, someone reporting that they do something 'all the time' scored higher than someone who reported that they did something 'occasionally'.
- For each dimension the scores for related items were simply averaged (taking the arithmetic mean), providing a maximum score of three and minimum of zero.
- The arithmetic mean of every respondent's dimension score provides our total scores, which in turn provide our baseline scores for the whole index.
- Children's items created the children's index, and matched parents' items created the parents index.

Key findings

The value of an index lies in comparisons, looking at the differences in scores between groups (e.g., boys versus girls, older versus younger) or over time (year one versus year two).

With one year's worth of data, the analysis presented in this report shows comparisons between different groups of children. How does the impact of digital technology on the four dimensions of wellbeing differ for children of different ages, genders, or other demographics? What about those who behave in different ways, or use digital technology more or less than others?

This first year of the index has highlighted some important differences between groups that span all of the four dimensions, which point towards the unequal impact of digital technology on the wellbeing of children.

Overall dimension scores

For the purposes of comparison, each group (e.g., girls, 9-10 year-olds, those who use social media) has had their scores compared with the average overall score for each dimension. These overall dimension scores tell us little on their own but will be an important baseline for comparison with future waves of the index, and to show differences between groups.

We are focusing on the children's scores as our primary way to analyse and interpret the index, looking at differences in experiences and wellbeing in a digital world described by children themselves.

However, we have also scored parents on those same dimensions and both parents and children's scores can be combined to look at how a household scores on each dimension relating to the child's experience. These scores, and combined child plus parent scores, are shown on page 11.

"With one year's worth of data, the analysis presented in this report shows comparisons between different groups of children. How does the impact of digital technology on the four dimensions of wellbeing differ for children of different ages, genders, or other demographics? What about those who behave in different ways, or use digital technology more or less than others?"

What do these scores represent?

Each dimension score represents the averaged answers to a range of different questions, all aiming to measure a different way in which digital technology can impact children's wellbeing. The differences between them cannot be used to infer meaningful trends (e.g., we cannot conclude that overall digital technology has more of a positive impact on developmental than emotional wellbeing) as the items within each dimension are not necessarily comparable.

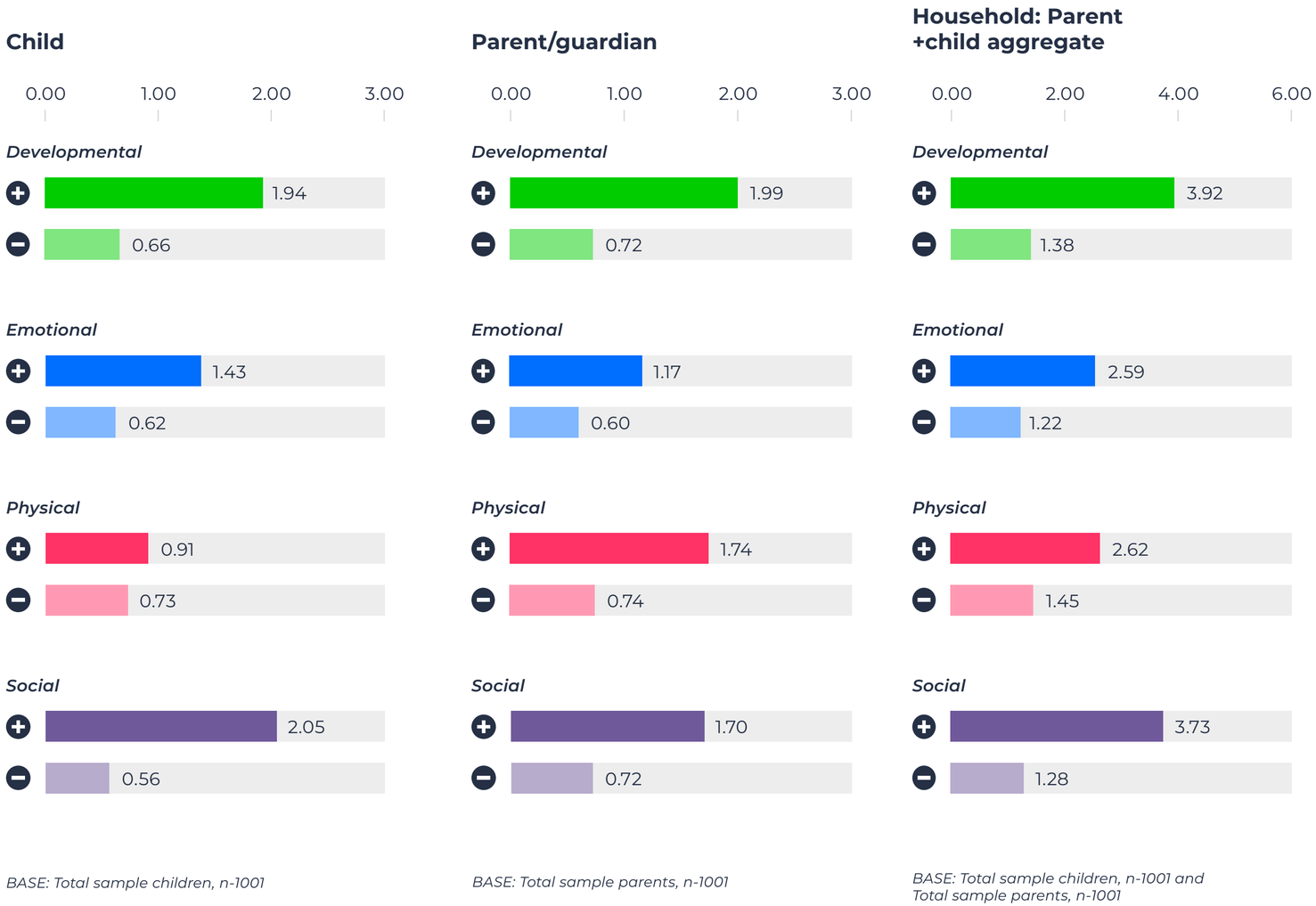
These scores therefore are useful as a *benchmark* from which different groups can be compared, or scores year on year. Please refer to the Methodology on Page 9 for an overview of how they are calculated.

A small number of items within the index were only asked of older children, where it was seen in the qualitative research that they were unlikely to be relevant or appropriate for younger age groups. For example – the item "I'm able to use the internet to earn money from some of the things I do online (e.g., website design, playing video games, sponsorship or payments from brands to promote things online/on social media)" was felt to be inappropriate as a measure of positive impact on developmental wellbeing for younger children. These items do not appear to drive notable differences in scores for older children, but this should be monitored in future waves (see Appendix 2 for more detail).

Overall, parents' scores are very similar to the children's. The only notable difference is that parents were much more likely to report children experiencing the positives of digital use and access related to physical wellbeing than children themselves.

Combining the child's scores with their parent's provides another way to look at and compare index scores. Here they are presented simply from adding together each parent and child's factor scores and then averaged across the sample. While not a feature of analysis in this report, this could be used as a baseline in future to determine how combined 'household' scores have changed over time.

Total scores for child and parent



BASE: Total sample children, n-1001

BASE: Total sample parents, n-1001

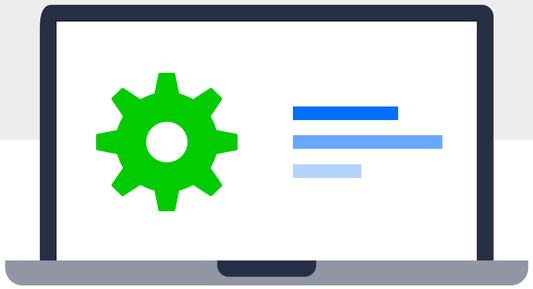
BASE: Total sample children, n-1001 and Total sample parents, n-1001

Reading the charts to follow:

The most important aspect of our analysis this year is how dimension scores vary between groups, not how scores differ from each other. To help display these differences we present the data as indices, rather than their underlying scores. To do this, our dimension score for the total sample becomes our baseline of 1.00 and scores from the sub-groups being analysed are presented relative to this. For example, a score of 1.50 tells us that particular group's average dimension score is 1.50 times the average (much higher), a score of 0.50 tell us it is 0.50 times the average (much lower).

Differences which we highlight and discuss here are based on scores which are statistically significantly different (at the 95% confidence level), but there are also many indicative differences or patterns in the data which are not necessarily statistically significant at this level.

The charts included in the rest of report are based on the child's scores so the focus is on how they are report the impact on themselves. In most cases, these scores are fairly well aligned with parents.



Indices for child scores – the average is 1.00. For comparison, all scores are expressed relative to this average, rather than their 'raw' number

For comparisons, using indices can be a more **helpful way to look at differences between groups**, because we can look at all the factors together.

To do this, the average score (i.e. our score for the total sample) becomes our baseline, and scores from other groups are presented relative to this average – i.e., how much higher or lower are scores than the total sample.

This line is the average or total to compare against.

We are looking for instances where the number falls **below or above 1.00.**

The impact of how much time children spend with digital technology, *and* what they're doing online

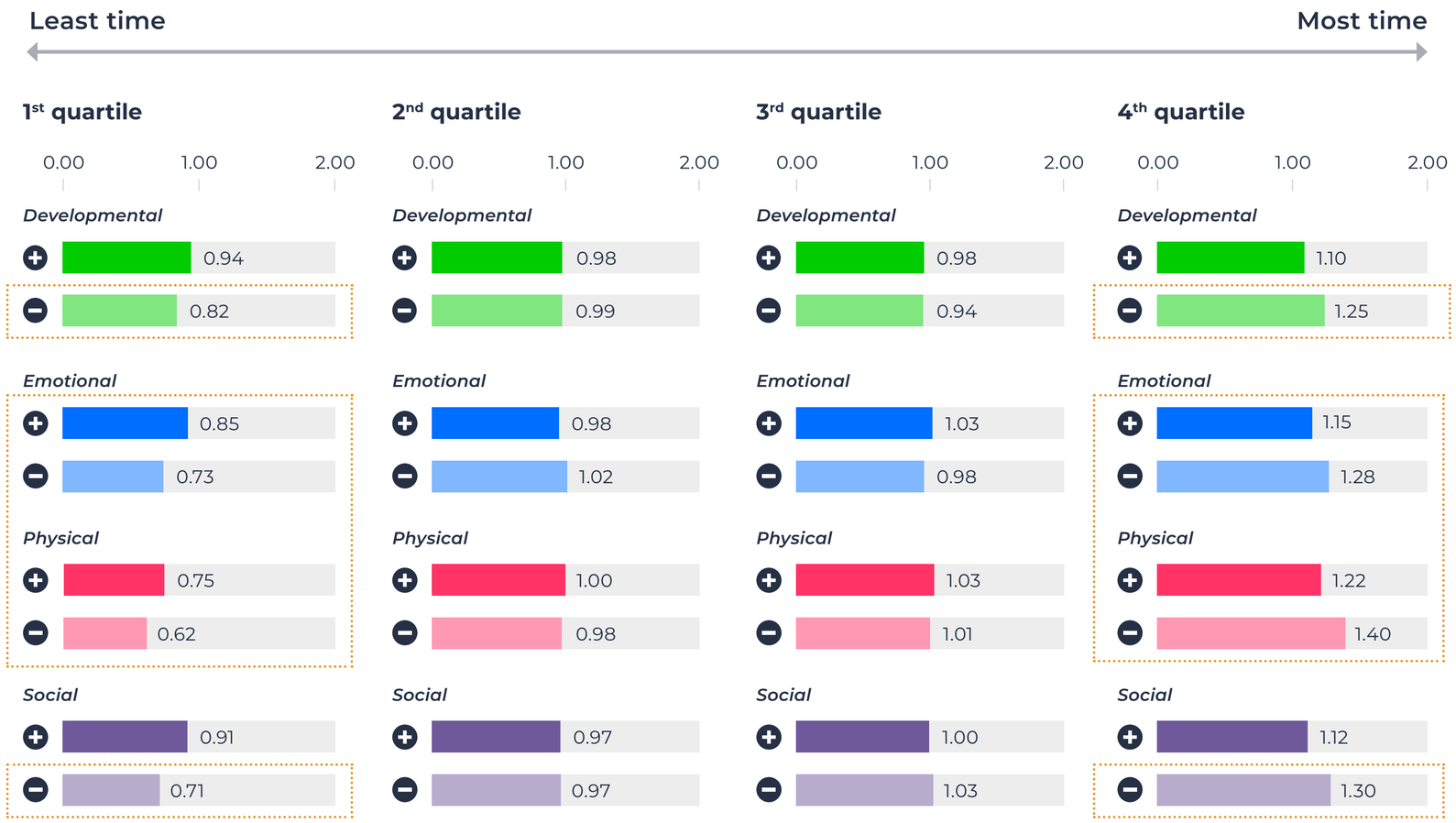
As children get older and spend more time with digital technology, they experience more of the positives *and* more of the negative impacts on wellbeing

The children who spend the least time using digital devices report significantly lower scores on almost all dimensions (all negative dimensions and on the positive emotional and positive social dimensions) and children who spend the most time using digital devices report significantly higher scores on all negative dimensions. Simply, children who spend less time online have fewer opportunities for it to impact them both positively and negatively, and those who spend the most time seem to have the greatest opportunity to experience the negative impacts.

Time spent using digital devices and social media correlates closely with age - the older children reporting significantly more time.

This translates to a similarly increased score for older children in comparison to younger; in particular, the negative impact of digital technology on physical wellbeing (specifically the reduction of physical activity as a result of digital technology use) shows a significant difference between the youngest and oldest children – this is true for both boys and girls. This suggests that children feel that their increasing use of digital technology as they get older causes an associated reduction in physical activity, and therefore physical wellbeing.

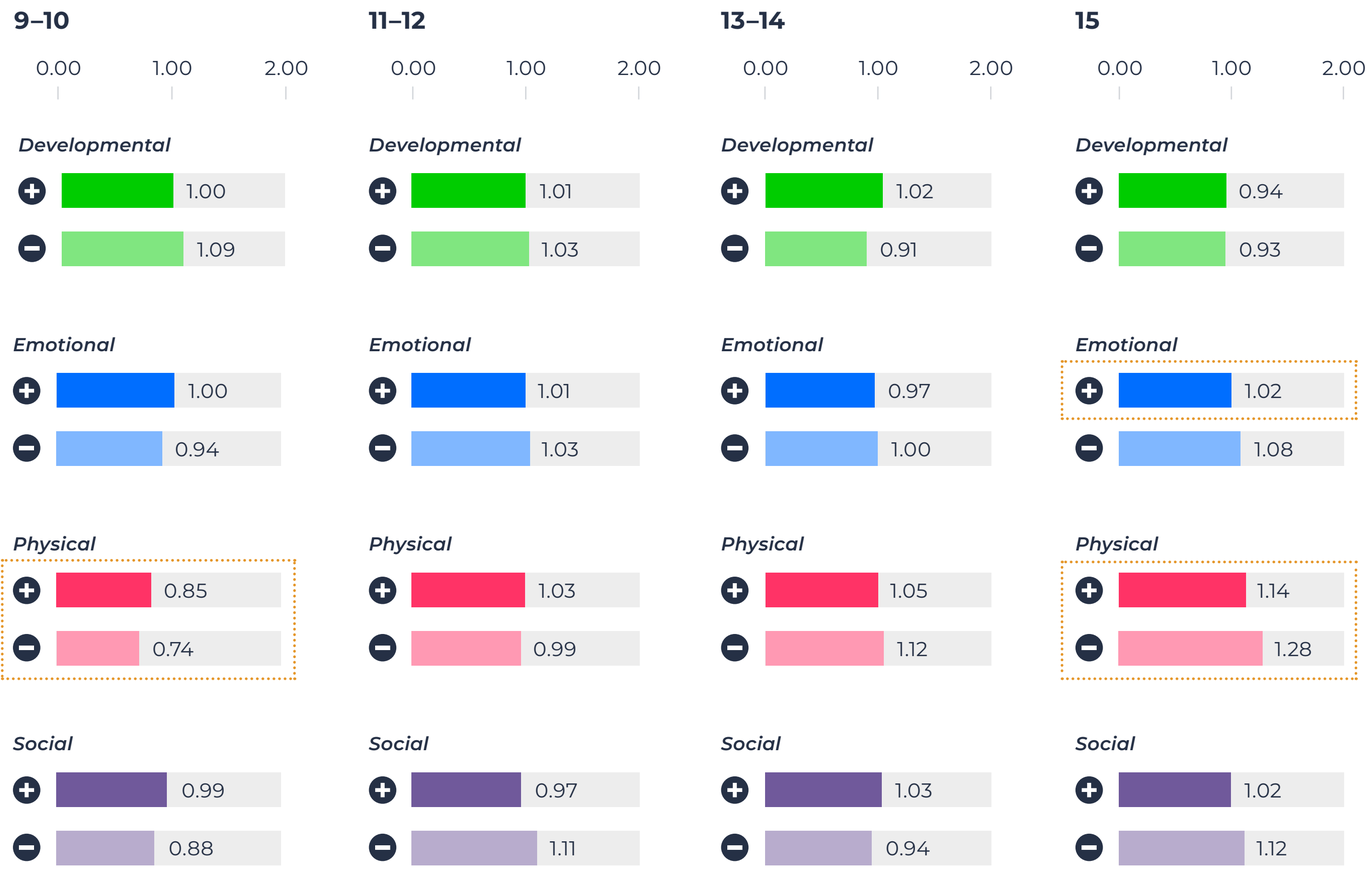
Reported time spent online / on devices by quartile



Highlighted differences are significant from the total sample mean (p=0.05)

BASE: Total sample children, n=1001; Quartiles based on total reported time spent on various online/digital activities – 1st quartile (least time) n=254; 2nd quartile n=253; 3rd quartile n=246; 4th quartile (most time) n=248

Age of child



Highlighted differences are significant from the total sample mean (p=0.05)
BASE: Total sample children, n=1001; 9-10 years old n=283; 11-12 years old n=289; 13-14 years old n=285; 15 years old n=144

What we learned from families:

For Emma (11) from the Jones family, digital devices played an important role in helping her to avoid boredom or to catch up with her friends when she wasn't with them. However, she explained that she would always prefer to actually be out and doing things with her friends as opposed to being on her devices.

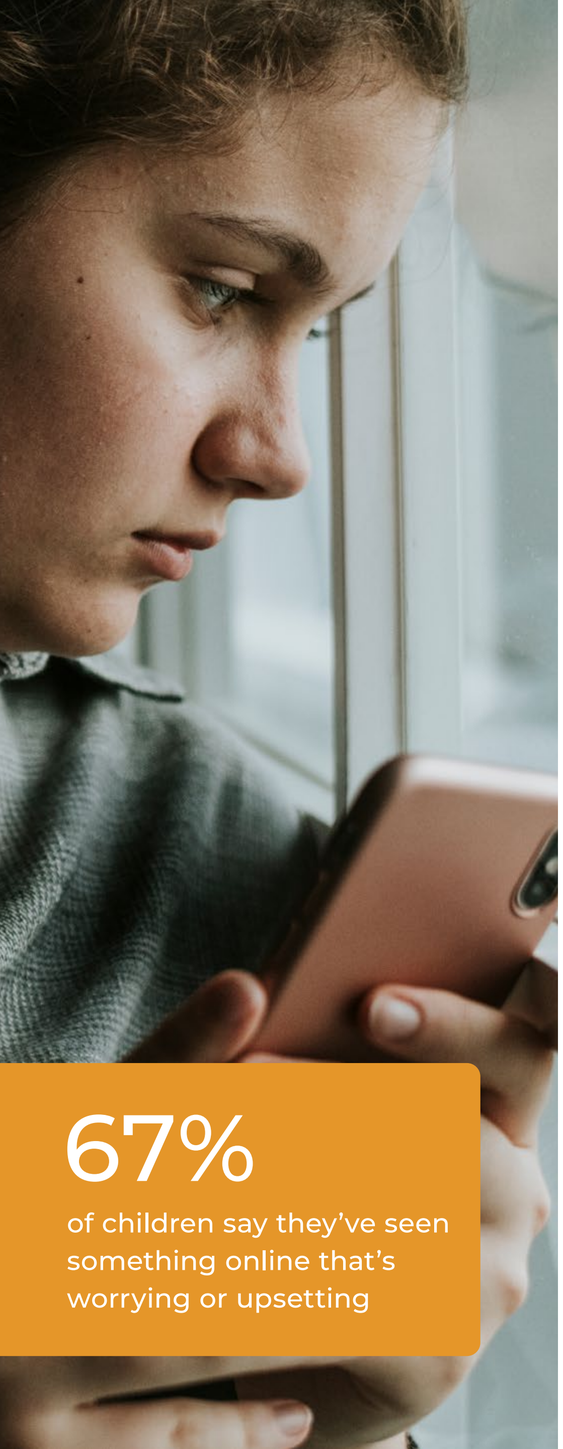
"I'd always prefer to actually meet them [friends] and go out than stay in"
Emma, 11

For Mia (15) from the Latif family, she felt that one benefit of digital devices was that it made her more independent. She said that her parents were happier to give her more freedom because they would be able to easily contact her if they needed to. She also explained how she likes that she can look things up on her phone which she felt made her less reliant on others to answer her questions.

"I can like search stuff, so I don't have to ask anybody about it I can just go online and find out more about it"
Mia, 15

In the Wilson family, Lorna, the mother, spoke about her concern that digital devices might be contributing to her daughter, Ayla (11), becoming more socially anxious and disengaging from her friends. Ayla was spending a large amount of time watching Netflix and going on TikTok, and had started saying to her mum that she was reluctant to see her friends.

"I know that she literally spends hours and hours and hours watching Netflix... it's actually got to the point where a couple of times her friends come over and her friends want to go out, and she's saying, 'oh, I don't really want to go out'."
Lorna (Ayla's mum)



67%

of children say they've seen something online that's worrying or upsetting

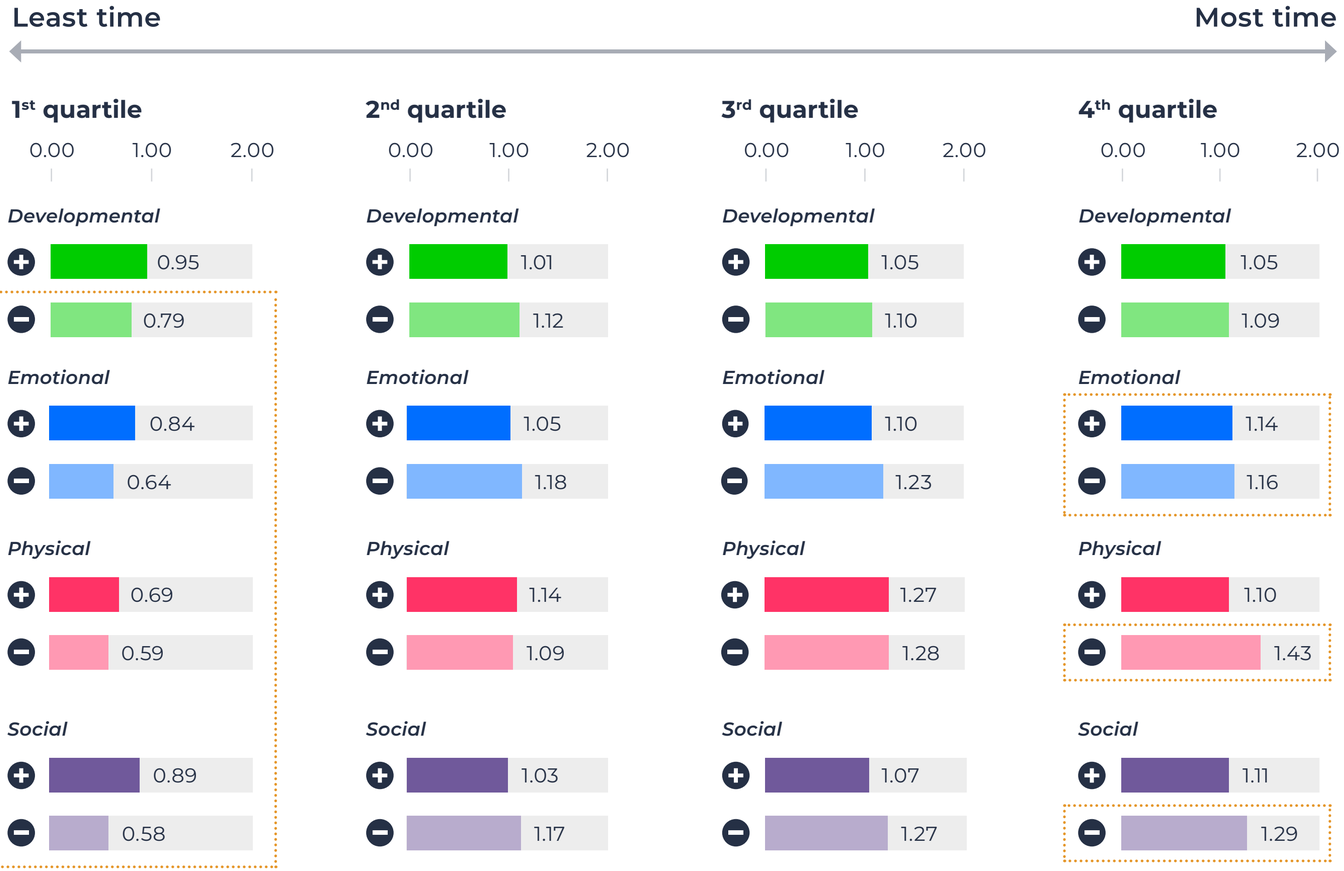
While displaying positive impacts, greater social media use was associated with increased negative impacts on social wellbeing – particularly for girls.

Social media use appeared to be an important contributor to children's index scores across all dimensions. The children who reported spending the least amount of time relative to others on social media, score significantly lower on almost all dimensions – positive and negative. Like the trend seen in overall use of digital technology, this suggests that less time spent on social media leaves children with fewer opportunities to be impacted both positively and negatively.

Younger respondents are generally much less likely to be using social media in the first place: 4 in 10 (39%) 9–10-year-old girls told us they don't use social media, compared to only a small minority of girls in other age groups.

This difference in behaviour drives some notable differences between girls of different ages: the youngest girls responding to the survey (9–10-year-olds) had significantly lower scores for the negative social wellbeing factor compared to girls in the older age groups (11-12, 13-14 and 15-year-olds). The youngest girls experienced significantly lower levels of negative impact on their social wellbeing, seemingly as a result of spending far less time on social media.

Reported time spent on social media by quartile



Highlighted differences are significant from the total sample mean (p=0.05)

BASE: Total sample children, n=1001; Quartiles based on total reported time spent on social media – 1st quartile (least time) n=348; 2nd quartile n=344; 3rd quartile n=169; 4th quartile (most time) n=140

Girls by age

Highlighted differences are significant from the total sample mean (p=0.05)
BASE: Girls sample children, n=499; 9-10 years old n=140; 11-12 years old n=144; 13-14 years old n=142; 15 years old n=73

Girls are slightly more likely to report experiencing the negative impacts on social wellbeing than boys, although the differences are indicative, not statistically significant based on the testing conducted. This difference is driven mostly by boys being less likely to report that they "get upset if they miss out on things happening on social media among their friends", which in turn is likely to be because they are less likely to say they use social media.

It is worth noting that children did also report a range of positives from their social media use. Half (52%) of children who told us they use social media reported that it definitely or mostly makes them 'happy'. While 31% said it lets them show people things they are proud of and one in five (21%) reported it makes them feel confident.

What we learned from families:

Mia (15) from the Latif family explained she and her friends regularly talked about the impact of social media on how they felt about the way they looked.

"I think it's mostly Instagram and stuff, seeing like all the nice like models posting and then like comparing themselves to them a lot which isn't really realistic I guess"

The way that Ayla was using social media also seemed to reflect that she was becoming increasingly self-conscious about her friends seeing what she was doing online:

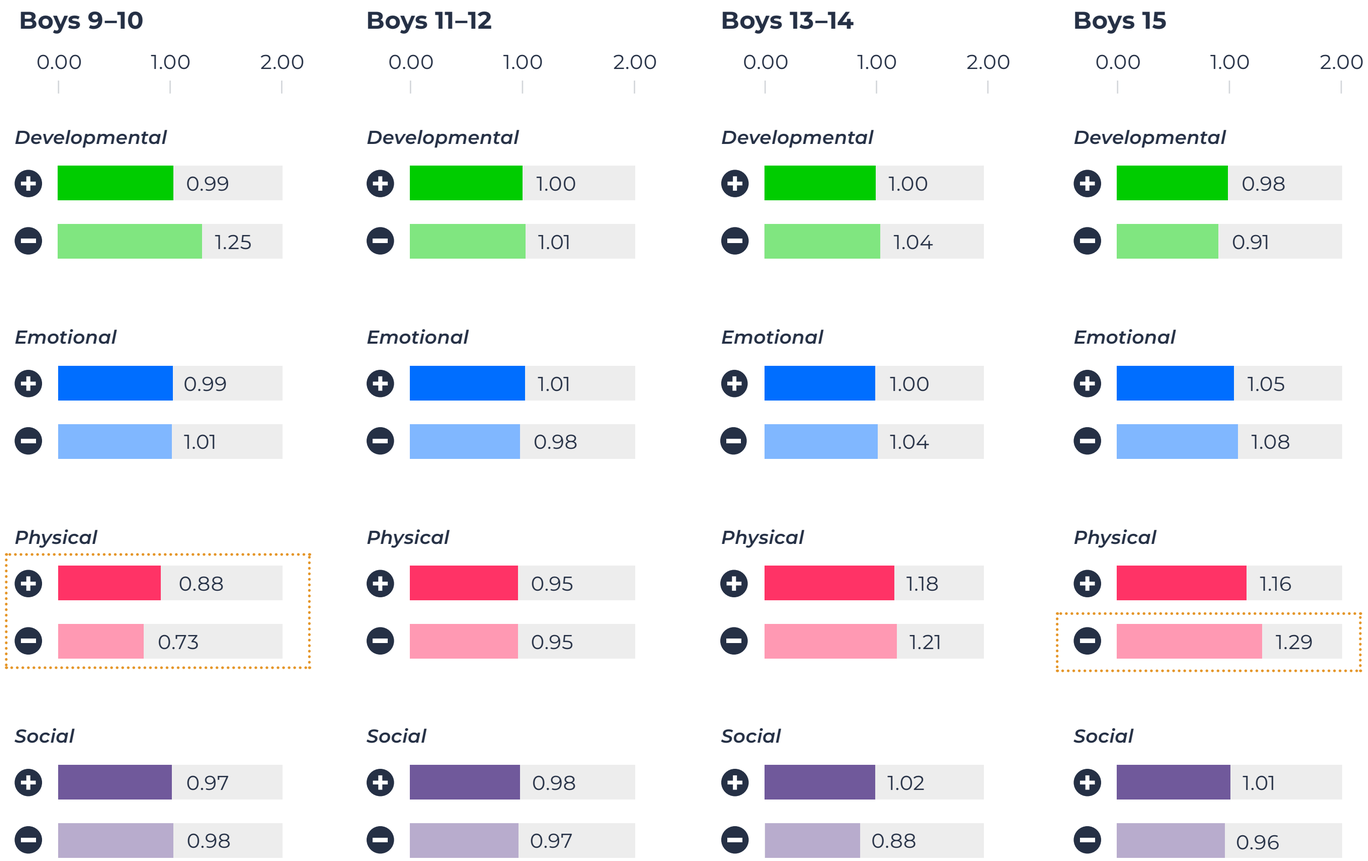
"I'm weird about people knowing what I do. So I have one [TikTok] account where I've got all my friends and I can watch videos and text my friends and stuff. And then I've got one account where I just watch videos"
Ayla, 11

Greater time spent gaming was associated with increased negative impact on developmental wellbeing (relating to feeling a lack of control) and physical wellbeing (missing out on physical activity due to digital technology use) – particularly for boys

Compared with girls, boys scored significantly higher on the negative developmental factor related to experiencing a lack of control over their digital behaviour.

Higher negative developmental wellbeing scores were driven largely by boys being slightly more likely to report they experience two particular items in this factor: that they 'spend money online without realising (e.g. buying apps and spending money in games)' and generally not feeling like they can 'control how much time they spend online.'

Boys by age



Highlighted differences are significant from the total sample mean (p=0.05)
BASE: Girls sample children, n=499; 9-10 years old n=140; 11-12 years old n=144; 13-14 years old n=142; 15 years old n=73

21%

of children said they stay up late (all the time or a lot) until the early hours of the morning on their phone, playing games or watching TV

Those who report spending the most time playing video games, relative to others, also score significantly higher on the negative developmental wellbeing factor overall. The largest differences are in the following items: 'I keep playing the same games or watching the same TV shows/films even when I'm not enjoying it' and 'I don't feel like I can control how much time I spend online'.

This same group reporting highest video game use, also score significantly higher on the negative physical wellbeing factor, which focuses on the opportunity costs for physical activity as a result of digital behaviour. Seemingly those who spend the most time gaming feel that their use of digital technology leads them to spend less time being physically active.

While gaming can provide benefits for social interaction and skill development, what seems to be underlined here is supporting children to manage time spent gaming in relation to other activities.

Reported time spent playing video games by quartile

Highlighted differences are significant from the total sample mean (p=0.05)
BASE: Total sample children, n=1001; Quartiles based on total reported time spent on single and multiplayer video games – 1st quartile (least time) n=319; 2nd quartile n=201; 3rd quartile n=267; 4th quartile (most time) n=212

What we learned from families:

In the Moore family, Isaac's (9) dad, Calum, had noticed that gaming had started to impact Isaac's behaviour. This included him getting emotional or angry at having to stop gaming and him losing interest in offline activities. Gaming was the main way that Isaac stayed in contact with friends, very rarely ever meeting up with them outside of school. Calum explained that Isaac would get upset and frustrated if his friends weren't online or if he lost a game.

Calum also felt that Isaac had become more irritable and generally disengaged from non-digital activities and was wanting to spend more time gaming than before. Calum explained that:

"He's more comfortable playing games and staying at home... He would rather just stay at home... Even if he's not playing the game, he just wouldn't want to go for a walk. You have to set a time and say at that time we're going to go for a walk. But if you don't prepare him for that time, he will kick up a fuss."
Calum (Isaac's father)

The impact of vulnerability

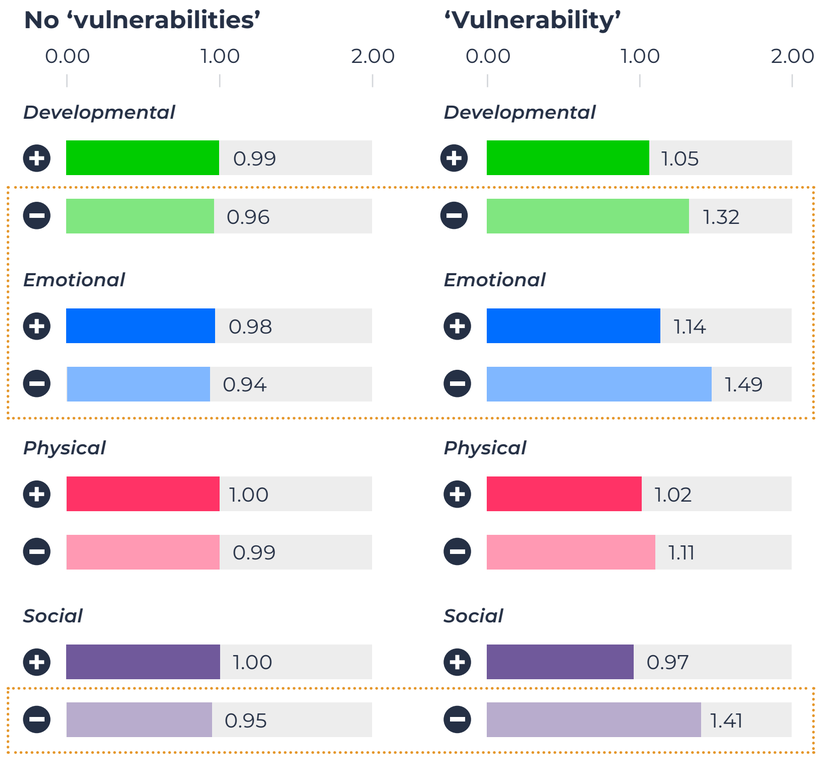
Vulnerable children experience more of the negative impacts of digital technology on wellbeing than their less vulnerable peers.

Vulnerable children – identified in the sample as those who are registered as having a disability, having special education needs or who receive professional support for mental health issues – reported significantly higher negative impacts on social, emotional and developmental wellbeing than their less vulnerable peers. These are some of the starkest differences seen across all of the analysis. Seemingly, more vulnerable children experience greater negative impacts to their wellbeing as a result of digital technology.

However, on some specific items and dimensions, more vulnerable children seem to simultaneously experience greater levels of positive impacts. For example, 6 in 10 parents (57%) of children classified as 'vulnerable' said that digital devices and technology 'play a role in helping their child overcome particular physical or communication challenges'. Half of these parents said they play an 'important' role day to day.

Children classed as vulnerable also scored slightly higher on the positive emotional factor – feeling good about themselves as a result of their digital behaviour – than the other children in the survey.

Vulnerability



For those classified as having a vulnerability, scores on the negative factors were noticeably higher relative to the average. Scores on some positive factors are also higher.

Highlighted differences are significant from the total sample mean (p=0.05)
BASE: Total sample children, n=1001; No vulnerabilities n=889; V ulnerability n=112

What we learned from families:

Connor, 10 from the Wilson family, who has a diagnosis of autism spectrum disorder, spent the majority of his time when not at school playing the game Minecraft. His mother, Lorna, explained that she felt conflicted about the amount of time he was spending gaming.

"I do worry about the amount of time he is spending online... but it's the only thing that really helps him stay calm"

She was pleased that he enjoyed the game so much and that it helped him explore different worlds, but she worried that he was missing out on social connections as a result and frequently worried about situations when he wouldn't have access to the game.

"I know he'd like to play with someone else, but unless his sisters free he doesn't really have anyone to play it [Minecraft] with"

Connor particularly liked to play using the 'creative mode' where he could build different worlds and generate animals without risk of being killed during game play. This allowed him to explore and play but he was predominantly playing alone.

Lorna also explained that while gaming is beneficial for Connor as it helps him feel happy and calm it also meant it was hard to get him to engage with other activities. For example, Lorna said that if they wanted to go on a walk, the only way they would be able to get Connor to come along was if he could take a device and game while they were walking. At times this made it hard to do activities together as a family.

The impact of family life and parental support

Families play a key role in how digital technology shapes children's wellbeing

Analysis was done to explore the degree of 'alignment' between each child's answers and their parent's answers to similar questions - i.e., whether parents reported that their child had similar or different experiences or attitudes to that which their child had reported.

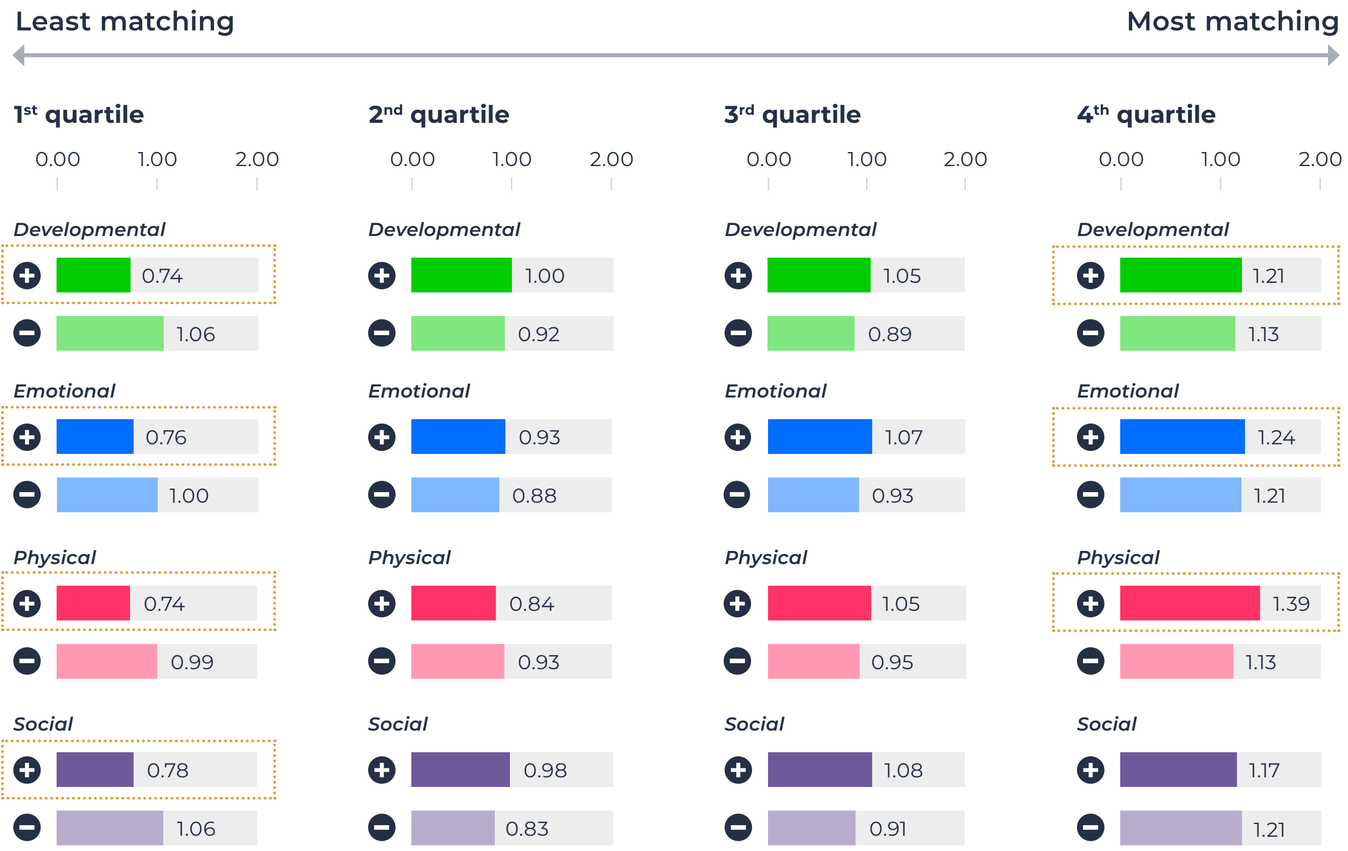
Children and parents were more likely to disagree about the child's experience in some areas more than others. In general, questions about behaviour were usually answered with a high degree of 'alignment' – whether a child is able to use technology to stay in contact with friends, for example, is a relatively easy experience for parents to see happening.

Questions about the child's emotional reaction to their online experiences, however, tended to lead to less 'alignment' in answers. This was particularly true for more subjective items related to children's negative experiences, where the parents were more likely to report these happening.

For example, 30% of parents felt their child 'compares themselves to people online/on social media in a way that I think is unhealthy', while only 21% of children recognised this behaviour in themselves. 38% of parents felt their child 'struggles to work out whether information they are exposed to online is true', compared to 31% of children telling us they 'find it difficult to know what is true online'. These kinds of items do require a greater level of interpretation and subjective assessment than others.

Parental awareness of children's online experiences overall is an indicator of how children score across the dimensions. Children whose answers differed most from their parents' perceptions of their online experiences scored lower on all positive factors. The strength of this correlation suggests that parental awareness is a useful indicator for a range of in-home behaviours that might be enabling children to make the most of digital technology.

Parent and child item alignment by quartile



Highlighted differences are significant from the total sample mean (p=0.05)

BASE: Total sample children, n=1001; Quartiles based on the number of correctly matched parent and child items (i.e. parent and child both answer with the same True or False to matched items) – 1st quartile (least matching) n=251; 2nd quartile n=265; 3rd quartile n=241; 4th quartile (most matching) n=244

Children who reported that their parents/guardians 'go on their phones when [I am] trying to talk to them' all the time or quite a lot, reported significantly higher scores on the negative factors across all dimensions. This raises questions about the impact of parents' own behaviours when using digital devices and the potential effect this can have on their children.

It is worth noting that, on average, younger children were slightly more likely to report parents doing this 'all the time / often'. This may reflect differences in how much attention younger children expect or want from their parents, combined with Covid-related home-working, as opposed to suggesting that parents of younger children are on their phones more than those of older children.

This is potentially a key trend to monitor in future waves of the index.

23%

of parents say they never argue with their children about how much time they spend online; **15%** say this happens all the time or quite a lot

Child's response to question: *My parent(s)/guardian(s) go on their phones/ devices when I'm trying to talk to them*

Highlighted differences are significant from the total sample mean (p=0.05)

BASE: Total sample children, response to item "My parent(s)/guardian(s) go on their phones/devices when I'm trying to talk to them" – All the time / quite a lot n=142; Occasionally n=291; Only once or twice n=218; Never n=288

What we learned from families:

In the Evans family, Greg, the father of Savannah (13) and Amy (10), explained that there were strict rules that his daughters would only be able to use their phones for an hour before bed. But Savannah explained that he doesn't really enforce this, so she will regularly spend three to four hours on her phone before she goes to sleep.

"Some nights he can be strict, but usually he forgets so I'll watch a couple of episodes [on Netflix] before I go to sleep"
Savannah, 13

Greg also explained that he was confident that he knew what his daughters were doing online and that they would speak to him if they had any concerns online.

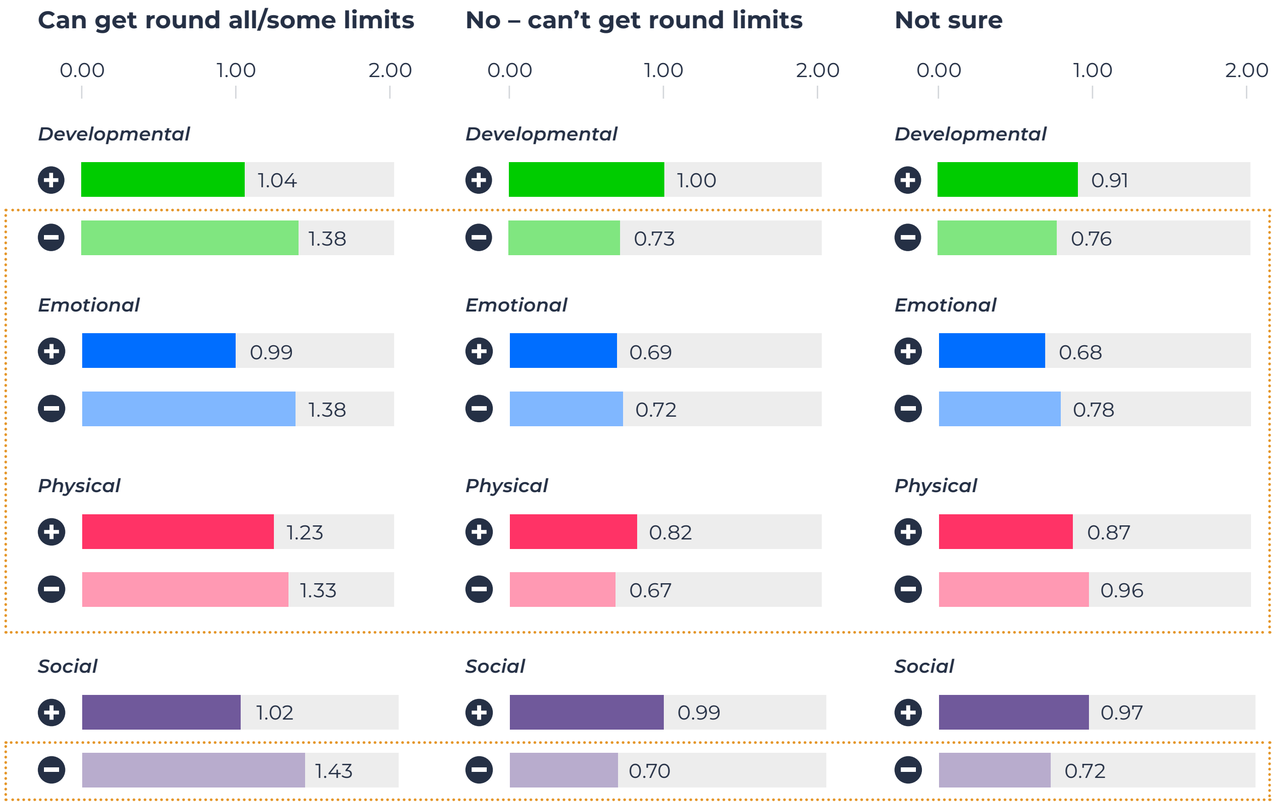
"I know 90% of what they're doing [online]..."
Greg (Savannah's father)

However, when we spoke to Savannah and Amy they disagreed and said that they avoided telling their parents about their online experiences.

"If anything happens [online] I wouldn't tell my dad... I'd speak to my sister or my friends about it"
Savannah, 13

Children were asked whether they had ways of getting around limits or controls parents had placed on the internet or their digital devices. Those who answered "I can get around all / some limits" reported significantly higher negative impacts on all four dimensions of wellbeing, relative to those who reported "no, I can't get around limits'. Children who say they can get around limits also report higher positive impact on emotional and physical wellbeing. This may be driven by the fact that those children who say they can get around limits are also those using digital technology and the internet the most, and therefore also have greater opportunity for both the negative and positive influences to impact them.

Child's response to question: *Do you have any ways you can use the internet or your devices to get around any limits your parent(s)/ guardian(s) put on them?*



Highlighted differences are significant from the total sample mean (p=0.05)
ASE: Total sample parents, by child's characteristics (response to item "Do you have any ways you can use the internet or your devices to get around any limits your parent(s)/guardian(s) put on them?") – Can get around all / some n=408; Can't get around limits n=380; Not sure n=211

Conclusions, recommendations and next steps by Internet Matters

At the end of this first year of research, we are much better informed about how the wellbeing landscape looks for digitally active children and young people. The index reveals how the many and wide-ranging positive aspects of being online are felt, and starts to reveal where our focus should be in mitigating the negatives. Yet we are just at the start of this journey and are now in a unique position to track how the picture changes over time as platforms continue to develop, children's digital use continues to become more expansive and the UK policy and regulatory landscape evolves.

We are pleased to see that the index shows a general alignment between how children and their parents perceive the impact of their digital participation. Being able to analyse responses to the same questions from different members of the same household is of huge importance. However, it also reinforces that not every family is the same, the benefits and challenges vary by age and gender of child and particularly for those with vulnerabilities. Even greater nuances may also become evident as we continue our analysis of the data. We are planning to publish further reports later this year to build on the initial findings.

The index shows how both the positive and negative outcomes all increase as children get older and spend more time online. So, can we achieve a balance to enhance the positive impacts on wellbeing and reduce the negatives for *all* children? How much can a new regulatory framework, better technology and more effective and targeted education help move us towards this goal?

Importance for families

The research underlines the importance of having a supportive environment in the home. Parents who talk to their children about their online lives, understand when they need help and model good digital behaviour can have a profound impact on their children's wellbeing in a digital

"The index shows how both the positive and negative outcomes all increase as children get older and spend more time online. So, can we achieve a balance to enhance the positive impacts on wellbeing and reduce the negatives for *all* children?"

world. We are already underway with additional research and analysis to more effectively highlight the role that parents play in their children's digital wellbeing and development of media literacy. We will also explore how parents could be better supported to overcome some of the challenges they've encountered in the last two years.

While managing the risks and maximising the opportunities of being online for children isn't solely the responsibility of parents, staying involved in children's online lives in their later teenage years appears to be as important as being there to guide and support them as they start their online journey. For girls, the impact of negative social interactions seems to be felt in the first years of secondary school (11-12) and continues through the teenage years, while boys seem to experience the negative impact of not being able to control their online activity when aged 9-10 and the balance tips towards a greater opportunity cost for physical wellbeing when they reach their teens.

With this in mind, in other research over 80% of parents have told us that having tailored advice about supporting online safety and wellbeing for their family would be hugely beneficial. This is why we've developed a Digital Family Toolkit that allows parents to access a personalised and relevant set of resources by answering some simple questions about their family using the index survey as a basis. We will also continue to create and adapt the content we produce to target the areas of need highlighted by the data, helping families to find the right balance encouraging children to flourish online and experience more of the benefits.

Importance for vulnerable children

Once again, we see how vulnerable children are disproportionately affected. Their scores for negative emotional wellbeing are 50% greater than non-vulnerable children and 48% greater for negative social wellbeing. Conversely, they are 16% greater for positive emotional wellbeing, thus vulnerable children are more likely to 'feel bad about themselves' as a result of digital interactions but also more likely to 'feel good about themselves'.

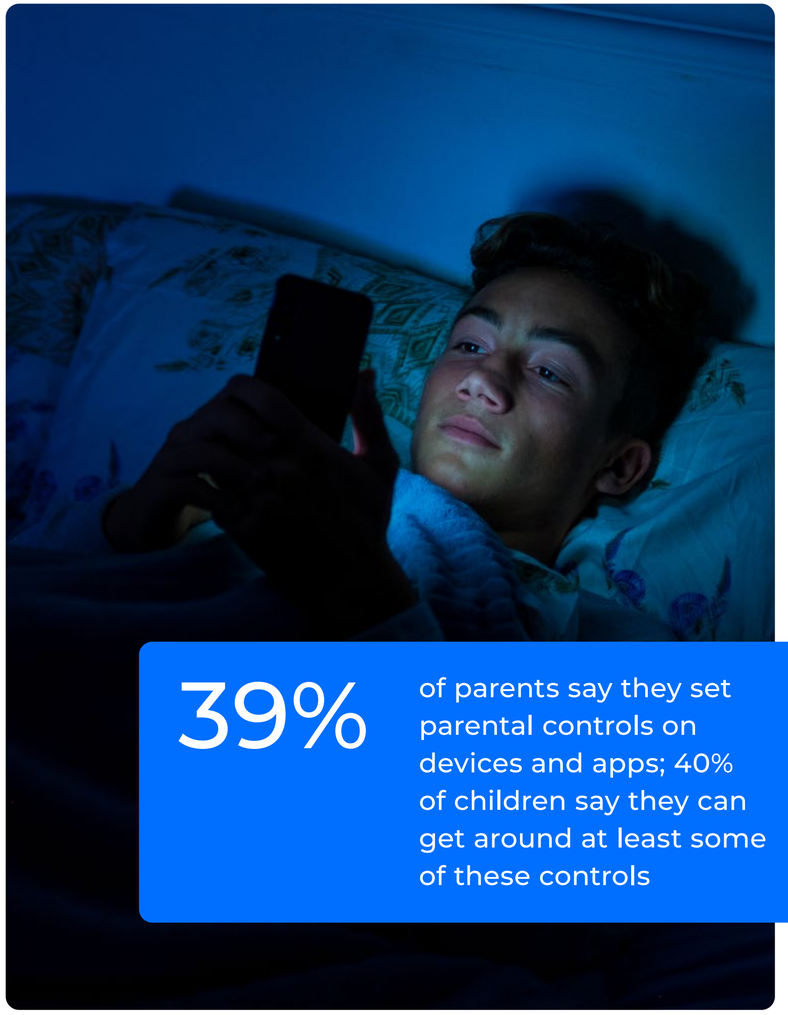
In the coming year we will continue to develop and share the resources we have already developed for vulnerable children, their parents, carers and the professionals who support them to ensure this guidance gets into the right hands. We also plan to replicate the index research with a broader group of vulnerable children, for example those in care settings and those who are digitally excluded, to gain a fuller picture of how wellbeing outcomes differ and what more can be done.

Importance in education

We would encourage educational professionals to recommend our resources to parents and use the index to help them explain and understand the wide-ranging impacts that digital usage can have on children and young people. In parent interactions and in lessons on digital literacy themselves we hope this work will help move towards a broader notion of 'wellbeing in a digital world' that encompasses more than just 'internet safety' and 'screen time'. This needs to be supported by appropriate guidance and support from the Department for Education, especially in light of the new RSHE curriculum.

Importance for policy

This research comes at a time when governments and regulators across the world are considering how best to mediate the impact of digital platforms on people's lives, especially children's. In the UK, the Children's Code (more formally known as the Age Appropriate Design Code) came into effect in September 2021, meaning that industry is now expected to put the best interests of children first when designing platforms and products which they are likely to use, in order to provide greater protection for their data. The explicit reference to wellbeing running through the Code is very welcome.



39% of parents say they set parental controls on devices and apps; 40% of children say they can get around at least some of these controls

List of relevant resources from Internet Matters:

- My Family's Digital Toolkit
- Social Media Advice Hub
- Online Gaming Advice Hub
- Advice by Age

Specific resources for parents and professionals working with vulnerable children:

- Connecting Safely Online
- Inclusive Digital Safety

But further regulatory change is on the horizon, in the form of the forthcoming Online Safety Bill. In one sense this landmark piece of legislation is much wider in scope than the Children's Code, aiming to protect children (and other vulnerable users) from an array of harms beyond data protection – e.g., sexual exploitation and abuse, exposure to inappropriate content, and mis/dis-information. But in other senses it is more limited, concerned only with content which might have a "significant adverse physical or psychological impact on a child of ordinary sensibilities". We would like to see an approach which is more consistent with the Children's Code in its focus on wellbeing, not only serious harm. This would involve a broader definition of content harmful to children than that contained in the draft bill.

Following the passage of the bill, Ofcom will become the new regulator for online harms in the UK. We would urge Ofcom to focus the role of online platforms in promoting wellbeing as it prepares for this new role. One key consideration will be how wellbeing in a digital world is conveyed through the codes of practice Ofcom is set to draft, which will set out what online platforms need to do in practical terms to comply with their new duties.

The policy implications of our research go beyond the regulation of platforms. There are also important implications for media literacy, which was the subject of a new government strategy from DCMS last year. The Media Literacy Strategy makes several references to wellbeing and what can be done to help empower and educate users, which is welcome. The focus on vulnerable users within the strategy is particularly important given the findings of our research, and we stand ready to support both DCMS and Ofcom on their continued work in this space.

Importance for industry

With the Age Appropriate Design Code now in force, there is already an expectation on organisations designing digital platforms and products for children to put wellbeing outcomes at the heart of the process. We hope our work helps provide some structure to how they might consider this and the key areas of focus for different groups. Children and young people, along with their parents and carers should be an integral part of the design process and we would welcome more data being made publicly available from these organisations regarding the impact on children and young people of their daily digital interactions. This will help us to better understand how specific types of activity shape wellbeing outcomes, which the index has clearly highlighted.

We have learned a lot during this process, and having established a benchmark, we have committed to running this research again next year to see how the index has changed. We will take our learnings into year two and would encourage government and policymakers to consider how this could be incorporated into their ongoing work on media literacy and children's wellbeing in the medium to long term.

We plan to open up the data set for additional analysis and would warmly welcome opportunities to collaborate on future reports. We also plan to add a longitudinal element to the research by following a small group of families as their children get older, allowing us to enhance the index findings with the voices of children, young people and their parents on the benefits and challenges of growing up online.

Like the digital world, wellbeing is dynamic and we would similarly welcome support as we continue to refine our approach to how we measure wellbeing in a digital world to create an index which is fit for the future.

Appendix 1: Methodology

There were several steps involved in developing this index of wellbeing in a digital world. They included:

1. Developing a draft survey
2. Qualitative in-home interviews with ten families
3. Large-scale quantitative testing of the draft survey
4. Selecting which items from the survey are in the index
5. Analysis of the survey data according to the index

Developing a draft survey

Using the definition of wellbeing in a digital world set out in 'Children and families' wellbeing in a digital world', a long-list of different survey items was developed aiming to measure individual components and/or influencing factors. This was done for each of the four dimensions in the report: developmental, emotional, physical and social wellbeing.

In addition to questions relating to the four dimensions, contextual questions were included, such as: the use of digital in-home, controls on children's access to devices, the extent to which children and parents discussed digital behaviour. These were included to enable the index scores to be cross-cut with contextual factors in the analysis.

Qualitative in-home interviews with 10 families

Ten qualitative interviews were conducted with families across all four nations of the UK to explore how digital technology impacts their lives and how this manifested in their developmental, emotional, physical and social wellbeing.

Interviews with families with children aged nine to 17 were designed to capture what children and their parents/guardians thought about their digital behaviour and how it impacts different aspects of their lives, as well as for researchers to observe some of this behaviour and household dynamics in practice.

A key function of these interviews was to test the individual survey items with families to see how well they were able to answer the different questions and to understand how accurately and precisely the survey was able to capture people's real behaviours and experiences.

Large-scale quantitative testing

Based on the qualitative interviews the survey was amended to ensure that it was accurately reflecting and capturing people's real behaviours and experiences. It was refined into a questionnaire with 100+ items relating to the dimensions of wellbeing, as well as contextual questions.

There were some limitations that influenced what was included in the final survey:

- Space – not every dimension could be covered in the same level of detail. This was because some dimensions encompass a larger number of factors which can influence wellbeing in a digital world, for example **developmental wellbeing** has more survey items dedicated to it than **physical wellbeing**. Inevitably there are several elements of the original wellbeing definitions as articulated in 'Children and families' wellbeing in a digital world' that do not have a dedicated question in the survey.
- Survey items are not all equally accurate representations of people's real behaviours or experiences—there was a mix of more objective and subjective items.

- Some concepts contained in 'Children and families' wellbeing in a digital world' are not quantifiable via a self-report survey in a meaningful way. For example, a survey cannot tell us who has been exposed to 'fake news', only who reports that they have – because awareness is critical to answering this accurately, this cannot provide an accurate enough proxy for actual exposure.
- For some topics, simple questions obscure real differences between people, making them difficult and even unhelpful to analyse and interpret. For example, among children who report being 'creative', there will be a huge diversity of actual behaviours that will range of their degree of creativity, which the child is unlikely to be able to judge or report accurately. Instead, the survey favoured items that relied on children's or parent's subjective feelings or actual behaviours, such as "social media lets me show people things I am proud of (e.g., something I did or made)" as a proxy for creativity.

The online survey was completed by 1,000 children aged 9-15, and one of their parents/guardians, totalling 2,000 responses in August/September 2021. The sample was stratified by age and gender of the child, with approximately 140 children of each age, with equal numbers of boys and girls. Quotas were not applied to the sample of parents, and we surveyed slightly more female parents/guardians than male: 551 to 450.

Developing the index

The index was created to meet the following assumptions:

- The index needs to represent each of the original dimensions – developmental, emotional, physical and social wellbeing
- The index must account for the fact that people can simultaneously experience positives and negatives in each wellbeing dimension
- The index should prioritise question items that were found to align closely with the observed real life experiences of families
- The index should prioritise survey items that reveal a greater degree of diversity in how children and parents answer it, as this suggests it will act effectively to differentiate between people
- The index should avoid duplication wherever possible to keep the number of items as low as possible, i.e., exclude items that address concepts that were covered elsewhere.

There were several steps involved in this:

Step 1: Data analysis

The survey items were reviewed in line with the above assumptions and items were selected for inclusion under each of the four dimensions of the index.

An initial factor analysis conducted on the survey data also demonstrated that people's responses to items that were intended to cover similar concepts correlated strongly, as would be expected. It showed, for example, that questions on the theme of remaining connected to people—a key concept covered in our social wellbeing items—naturally grouped together.

This factor analysis identified 12 themes in the children's answers and 15 in the parent's answers. There was significant overlap in the themes identified in factor analysis and the positive and negative poles of the four dimensions identified in 'Children and families' wellbeing in a digital world', plus items that were included for contextual analysis and grouped accordingly.

Step 2: Grouping items into factors

Starting with the children's responses, a now reduced set of items were grouped together into a positive and negative factor for each dimension.

A matched set of parent's factors were then created using items that matched those used for the children. Some additional items from parents were used where they provided extra detail that wasn't possible to collect from the children themselves.

Step 3: Scoring factors

Survey items were scored based on the strength of respondents answers. For instance, someone reporting that they do something 'all the time' scored higher than someone who reported that they did something 'occasionally'.

Each survey item had a maximum score of three with the arithmetic mean of each items score providing the individuals score for that factor (the maximum being three and the minimum being zero).

The arithmetic mean of every respondent's factor score provides our total scores, which in turn provide our baseline scores for the whole index across each dimension.

The resulting index represents a snapshot of how digital technology is impacting children's wellbeing, both for the positive and negative, from the perspective of both children and their parents.

Appendix 2: The index in detail

The index is based on four key dimensions identified in the 'Children and families' wellbeing in a digital world' report by Dr Diane Levine and team at the University of Leicester.

This section outlines how the items that are included under each dimension were developed, refined and selected for inclusion based on:

- The original definition of each dimension of wellbeing in a digital world from the University of Leicester report
- The qualitative research findings exploring how these issues manifest and appear in the real lives of children across the UK
- The testing of different survey question items during this qualitative research, to establish which were better at tapping into these real world experiences.

How digital technology impacts developmental wellbeing

Definition:

Developmental wellbeing refers to the realisation of cognitive capabilities and achievement of educational potential; managing financial responsibilities that come with maturation; personal growth.

To develop well in a digital world, you can benefit from: opportunities for learning new skills and developing a sense of wonder; opportunities to develop thinking, collaboration, organisation and problem-solving skills; opportunities to bring together content to offer to others; access to new information and online learning including gaining qualifications; exposure to alternative opinions and world-views and examples of mature rational discussion; secure understanding of how data are used; and the digital skills, confidence and competence for everyday tasks and roles in daily life (including work, homework, household administration and financial management). For some, technology can even provide an income stream, for example through the safe monetisation of digital platforms.

You will need to manage the risks from: exposure to disinformation; fake news; fallacies and conspiracy theories; living in an echo-chamber; wasting or missing opportunities to learn; seeing examples of unhelpful and irrational thinking; cybersecurity challenges such as managing personal data online; challenges to financial wellbeing such as exposure to the varied and subtle ways that online games take money from players, sometimes in tiny but repeated payments.

From 'Children and families' wellbeing in a digital world', University of Leicester

How this translates to the lives of real children

In the qualitative research, most children were using digital technology to learn, develop and explore the world. From using YouTube to learn new skills, using online learning platforms to keep up with schoolwork, to using the internet to find activities or hobbies to take part in. Children were using digital technology to pursue their passions for music, sport, art and games.

Conversely, most children were able to articulate at least some ways in which technology left them finding it hard to control– e.g., finding it hard to switch off, spending more time than they wanted to, or spending more money online than they intended to. Others were partaking in very repetitive and by the own description, not very valuable activities – e.g., rewatching the same series on Netflix over and over, or continually scrolling even while they found the content boring or annoying.

What we can and can't measure

Children and parents could intuitively answer questions around learning opportunities and using technology to pursue education, interests and hobbies. Equally they seemed able to accurately answer questions around feelings of control (or lack of) regarding technology.

Children struggled to meaningfully answer questions around misinformation and fake news – they don't know what they don't know, so very difficult to include measures tapping into this part of developmental wellbeing.

Items included in the index for developmental wellbeing

Children's questions

Items that contribute to a positive score

- Technology and being online has been important for me being able to find new hobbies or things I am interested in
- Technology and being online has been important for me being more independent and being able to do things by myself
- Technology and being online has been important for me getting ideas for what I would like to do in the future (e.g., as a job) [13+ only]
- Technology and being online has been important for me learning about things that no-one would teach me about in real life [13+ only]
- Technology and being online has been important for helping me revise/learn things for school
- I'm able to use the internet to earn money from some of the things I do online (e.g., website design, playing video games, sponsorship or payments from brands to promote things online/on social media) [15+ only]

Items that contribute to a negative score

- I don't feel like I can control how much time I spend online
- I keep playing the same games or watching the same TV shows/films even when I'm not enjoying it
- I run out of things to see on social media so scroll through the same things again [13+ only]
- I see something I don't like online or on social media, but don't know what to do about it
- I quite easily spend money online without realising e.g. buying apps and spending money in games

Parent's questions

Items that contribute to a positive score

- My child benefits a lot from being able to look things up online that they are interested in
- My child fully understands what personal information they should and shouldn't share online
- Technology and being online has been important for my child in having more independence (e.g., because they can be contacted and are able to use their phone to get to places etc.)
- Technology and being online has been important for my child being able to engage with schoolwork and other educational opportunities
- Technology and being online has been important for my child making money by using specific digital skills (e.g., website design, playing video games, sponsorship or payments from brands to promote things online/on social media) [15+ only]
- Technology and being online has been important for my child thinking and planning for the future (e.g., what they would like to do after they leave school)
- Technology and being online has been important for my child in being able to learn new skills

Items that contribute to a negative score

- My child spends a lot of time re-watching the same TV shows or re-playing the same games that they've seen or played before over and over again
- My child struggles to work out whether the information they are exposed to online/on social media is true
- My child spends money in apps or on games without realising

How digital technology impacts emotional wellbeing

Definition:

Emotional wellbeing: healthy emotional development; ability to cope with stress and setbacks; spiritual development; development of thoughtful values and a positive outlook; space and opportunities to flourish; life purpose; autonomy; feeling successful

To be well in a digital world, you can benefit from: opportunities for creativity and self-expression, for example online curation of links to hobbies; opportunities to be authentic, for self-validation and building self-worth; information about methods of self-regulation such as timed meditation practice apps; channels that let us articulate our emotions and validate our experiences, for example special interest groups on social media; exposure to positive role models; harmless strategies for distraction and management of emotional pain; opportunities to engage in joyful and enjoyable activities such as developing or operating in gameworlds.

You will need to manage the risks from: addiction; low self-worth; increased emotional distress; destructive behaviours or beliefs such as self-harm or radicalisation; shaming and isolation; 'doom-scrolling' (continual scrolling through negative news); unrealistic comparisons against impossible standards; exposure to harmful content such as extreme pornography; exposure to 'persuasive design' and a desire for constant, instant self-gratification.

From 'Children and families' wellbeing in a digital world', University of Leicester

How this translates to the lives of real children

The way in which the digital activities and behaviours of children and parents impact their emotional wellbeing is complex and can include a wide range of concepts.

During the qualitative research, the ways in which digital technology is thought to positively impact wellbeing according to the above definition were more easily articulated by children and parents; digital activities that positively impacted their emotions or mood.

The opposite was also true, in that parents and children could clearly identify and articulate ways in which using digital had negative impacts on children's emotions or mood, e.g., by causing anxiety or stress.

What we can and can't measure

The children and parents we spoke to found it easy to answer question items that related to how they felt about things they had seen online. However, it was harder for them to reflect on whether the ways in which they were using digital devices was contributing to this or how the design of the platforms or websites they were using might be impacting them.

Where they also struggled were questions that were more subtle about the potential of negative comparisons or being aware of the impact that being online might have on their self-esteem. While some parents felt that they were able to answer those questions in relation to their child, the children themselves rarely admitted that this was the case.

Items included in the index for emotional wellbeing

Children's questions

Items that contribute to a positive score

- I'm able to be myself online or on social media [13+ only]
- I create things I'm proud of online or using technology (e.g., games or computer programmes)
- Being online has let me find people that I admire and look up to [13+ only]
- Being online has helped me to feel more comfortable with being 'me' [13+ only]
- Technology and being online has been important for me for seeing things or people online that inspire me to try new things
- Using social media makes me happy

Items that contribute to a negative score

- I worry a lot about what other people think of me online (e.g., on social media)
- I see people online/on social media who make me feel sad because I'm not like them
- I get upset if something I post online/on social media does not get many likes or nice/positive comments
- I see things online that worry or upset me
- I post or say things online that I regret later
- I get upset playing video games [more than when doing other things]
- I worry about saying something wrong online/on social media

Parent's questions

Items that contribute to a positive score

- Online platforms/resources have allowed my child to learn about and empathise with people who have different experiences to them, which they wouldn't have otherwise had exposure to
- Digital devices/being online have has allowed my child to discover and pursue interests/hobbies that make them happy
- Being online has enabled my child to find positive role models which inspire them to try new things and work towards new goals
- Digital devices/being online have allowed my child to learn about people, places, activities and ideas that they otherwise wouldn't

Items that contribute to a negative score

- My child's online activity exposes them to content that encourages or supports unhealthy body image (e.g., extreme weight loss or muscle gain)
- My child worries a lot about how others perceive them online (especially social media)
- My child compares themselves to people they see online/on social media in a way that I think is unhealthy
- My child gets more easily upset/angry when online or playing video games than when doing other things
- My child gets upset because something online or social media does not get the response they wanted it to (e.g., not enough 'likes', or interpreted the wrong way)
- My child sees things online that worry or upset them

How digital technology impacts physical wellbeing

Definition:

Physical wellbeing: achievement and maintenance of healthy thriving; development of physical capabilities; using technology in physical safety; access/lack of access to supportive or accessibility technologies

To be well in a digital world, you can benefit from: opportunity to maintain a healthy balance between sedentary and active behaviours; to develop new physical skills; opportunities to participate in mobile digital activities; access to supportive or assistive technologies for those with chronic disabilities, for example reading pens or visual search engines, or 'adaptive switches' designed to help people independently activate switch enabled devices such as smartphones; information about healthy lifestyle choices; shared or learned activities for wellbeing (sports, exercise, relaxation).

You will need to manage the risks from: losing opportunities of doing healthy and joyful activity in favour of sedentary or shut-in lifestyles, sometimes called 'displacement '; sleep disruption; exposure to problematic temptations impacting physical health and wellbeing; exposure to potentially damaging content promoting unhealthy behaviours towards food or exercise or negative impact on nutrition; impact on self-ideation and body confidence.

From 'Children and families' wellbeing in a digital world', University of Leicester

How this translates to the lives of real children

During the qualitative interviews families told us about different ways they used digital to engage with physical activity. It was clear that digital devices could be used in a positive way to facilitate physical activity, to learn or develop existing skills or as a way to organise activities.

Many children in the sample appeared to struggle greatly to independently control the amount of time they spent online. Children would lose track of how much time they were spending on their devices and would sometimes be on them until late at night. This could have immediate negative implications on children's physical wellbeing, such as losing sleep. At times parents told us this meant that their children were also disengaged from activities they had done before such as playing outside with friends in preference of staying inside and watching TV online or gaming.

What we can and can't measure

When testing the questions with families, both children and parents were able to answer questions that related directly to whether digital was enabling them to do physical activity or if it was having a clear negative impact such as causing them to stop doing physical activity or to lose sleep. When asked, both parents and children struggled to reflect on how digital devices might influence their behaviour when it came to food or how what they were seeing online was impacting their lifestyle.

Items included in the index for physical wellbeing

Children's questions

Items that contribute to a positive score

- Technology and being online has been important for me to learn new skills at a sport or physical activity
- Technology and being online has been important for me to use apps, websites and devices to help me stay healthy
- Technology and being online has been important for me to use my phone to arrange to meet up to play sports or do activities outside

Items that contribute to a negative score

- I stay up late on my phone, playing games or watching TV (e.g., into the early hours of the morning once everyone else has gone to bed)
- I have stopped playing a sport or doing exercise because I want to play video games, watch TV or be on social media instead

Parent's questions

Items that contribute to a positive score

- Technology and being online has been important for my child to enable them to learn skills or pick up tips for improving a sport or exercise activity they do (e.g., by watching videos on YouTube or reading about sports online)
- Technology and being online has been important for my child in finding out about new activities they want to try out (e.g., seeing people doing a sport on social media)

Items that contribute to a negative score

- The way my child spends time on their phone, computer or games console negatively affects my child's sleep patterns
- My child misses out on opportunities to do activities because they're too busy on their phone, computer or games console (e.g., playing sports or playing outside with friends)

How digital technology impacts social wellbeing

Definition:

Social wellbeing: participation in wider communities including schools, clubs or societies; being an active citizen; ability to work with others; healthy interaction with online communities; maintenance of positive and sustainable online personae; managing the risks of grooming and exploitation; development and maintenance of good relations with significant people both online and offline; communication with people we know

To be well in a digital world, you can benefit from: relationships with significant others who bring care and support, opportunities to both keep apart, and integrate online and offline relationships and the knowledge of when to do this; opportunities for shared experiences and building of new positive relationships; maintaining existing relationships; healthy and open communications; opportunities to help and support others; mentoring and being a mentor; access to community of 'people like me' (for example through digital activism or peer support groups); ability to move between communities; healthy interaction with unknown people or in public forums; positive reinforcement from community participation; maintenance of a non-destructive and age-appropriate online presence; opportunities to be an active citizen.

You will need to manage the risks of: experiencing and exhibiting bullying behaviour, grooming and other forms of exploitation; forming and/or being unable to escape from destructive relationships; becoming cut off from family and friends; withdrawal and alienation; lack of communication or loneliness; unhealthy comparison with others; fear of missing out; participation in communities that are intrinsically harmful, abusive or anti-social participation styles; a digital footprint with negative consequences for the future; isolation from social interaction in digitally-mediated and physical life; exposure to racism and other forms of discrimination; development of antisocial behaviours and alienation from broader society (such as radicalisation).

From 'Children and families' wellbeing in a digital world', University of Leicester

How this translates to the lives of real children

The power for technology to keep people connected was evident and was seen as a key benefit by both children and parents in the qualitative fieldwork. Digital devices enabled children and families to maintain and build connections with people they cared about. This included loved ones and friends who lived further away, allowing them to maintain important relationships but also to have regular contact with peers. This key benefit of technology had been heightened as a result of the lockdowns that were close in memory for many of the respondents.

While connecting with others is easy using technology, the most benefit came for those who were able to balance this with offline interactions or who used digital devices to help facilitate online and offline relationships.

Children and parents also told us about the downsides of using digital devices and being online in relation to social dynamics, this including things like having negative experiences with others online but also being online causing children to withdraw from their social interactions.

What we can and can't measure

Parents and their children were able to answer practical questions that related to how well they were able to use digital to facilitate their social connections in particular in relation to developing meaningful relationships. However, it was harder for them to understand how things they were experiencing online might be impacting more subjective topics such as how it might influence their ability to work in a team.

Items included in the index for social wellbeing

Children's questions

Items that contribute to a positive score

- Technology and being online helps me to stay in close contact with my friends
- Technology and being online helps me to stay in contact with friends or family I wouldn't be able to otherwise (e.g., friends who live far away)
- Technology and being online helps me meet people who become good friends
- Digital devices/ being online lets me feel like part of a group

Items that contribute to a negative score

- I have upsetting experiences interacting with other people online (e.g., bullying)
- If I miss out on things that are happening on social media among my friends I get upset

Parent's questions

Items that contribute to a positive score

- Digital devices/being online has enabled my child to feel part of a group that they otherwise wouldn't have
- The internet and digital devices (e.g., smartphone) has helped my child to stay in contact with people they otherwise wouldn't have been able to do (e.g., relatives or friends who live far away)
- Technology and being online help my child to meet people who have become important friends
- Technology and being online help my child to find groups or communities that can offer friendship and support
- Technology and being online help my child to stay in contact and maintain meaningful relationships with people who are important to them
- Technology and being online help my child participate in activities and moments/events that are important to them

Items that contribute to a negative score

- My child has had negative experiences interacting with other people online (e.g., bullying)
- My child turns down opportunities to meet with friends so they can stay in on their phone, computer or games console
- I often find it difficult to get my child out the house because they want to stay in and play video games, stream and watch TV programmes or be on their phone

Note on analysis across age groups

Some index items were only asked of older children in the sample (some had a threshold of 13+ and others 15+). These items were judged to be important influences on the wellbeing of older children, but very unlikely to feature in the lives of the younger children we met during the qualitative research.

However this difference in items between age groups has the potential to act as a confounding variable in the analysis when making comparisons across age groups. For example, if an individual item asked only of older children scores on average very highly, this may increase older children's average score for that index overall when compared to that for younger children.

Analysis to compare scores between older and younger children both with and without items asked only of older children reveals no significant difference. In fact, all trends reported in this wave remain when these items are removed, suggesting this is not currently acting as a confounding variable. These findings also correlate closely with parent's scores, suggesting consistent underlying trends by age of child.

A learning for future waves of the index is to ask all items of all children we would be able to analyse the impact of excluding those items for younger children.

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