Computing in Contemporary Society

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The Digital Divide

Lecture three

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Last week

- We examined several schools of ethical thinking which guide how we behave morally and how we view technology

This week

- We explore relationship between technology and society, focusing on the digital divide and reasons for digital exclusion, both globally and in the UK

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This week's reading and listening

- Read "Millions in UK are being left behind as world moves online", Guardian article from June 2023
- Read "Kerala is rolling out free broadband for its poorest citizens" Guardian article from June 2023

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This week's lecture is about

- The global digital divide
- Digital exclusion around the world
- Difference in access speeds
- The digital skills divide in the UK

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The global digital divide

- Tavani (2016) offers a working definition: "The perceived gap between those who have and do not have access to "information tools" and between those who have and do not have the ability to use those tools"
- Rooks and Weckert (2007) described it as a "notoriously muddy term", implying that the gap is troubling
- Suggests there are many "divides":

—between nations (global digital divide) and within nations

—between rich and poor, educated and less educated, people with and without disabilities, men and women

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Trends in global internet usage

- Between 2005 and 2019, the number of Internet users grew on average by 10 per cent every year
- The rising trend masks rising inequality between the developed and less developed world
- 96 per cent of the 2.7 billion people still offline are living in the developing world (all figures from ITU, 2022)

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Fig 1: Percentage of individuals on the Internet, by country group (ITU, 2023)

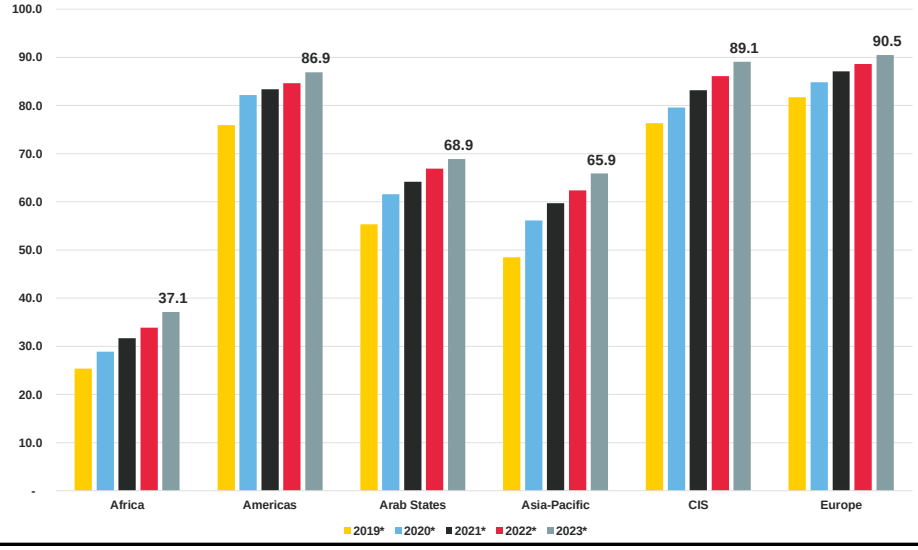

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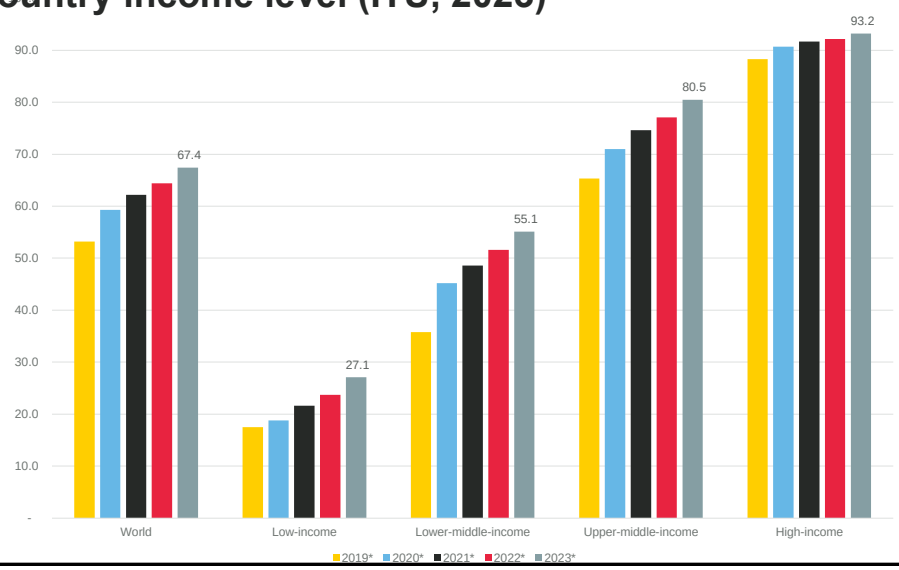
Fig 2: Percentage of individuals on the Internet, by country income level (ITU, 2023)



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Trends in global internet usage

- After years of steady growth, numbers rose considerably during a “pandemic boost” in 2020 and 2021; however, this was short-lived
- Inequality between the developed and less developed world means some users are rarely able to be online
  - Poor connectivity and slow speeds
  - Intermittent access to electricity
  - Access is more expensive as a proportion of earnings
- The **digital gender gap** is growing fast in developing countries

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Temporary pandemic boost to internet

- The ITU estimates that the number of people who have used the Internet surged to 4.9 billion in 2021, 53.6 per cent of the global population, from an estimated 4.1 billion in 2019
- The unusually sharp rise was because of measures taken during the pandemic, such as widespread lockdowns and school closures, combined with people's need for access to news, government services, health updates, e-commerce and online banking
- However, the urban-rural gap remains **severe** (globally 82% of urban dwellers compared to 46% of rural)
- Even in Europe, 83% of rural dwellers against 91% of urban dwellers use the internet, often with much poorer speeds

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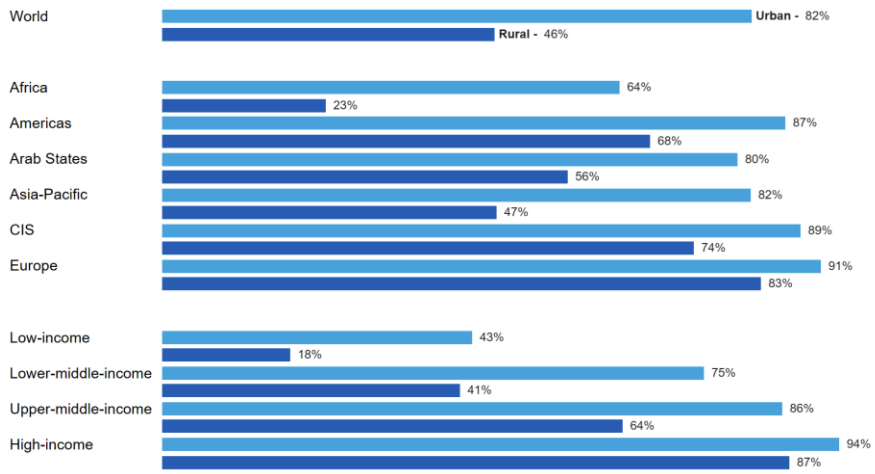
Fig 3: Percentage of individuals using the internet in urban and rural areas, 2022 (Source: ITU, 2023)



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The digital gender gap

- The proportion of women using the Internet globally is 57%, compared to 62% of men; in relative terms, this means that the global Internet user gap is 17%
- The gap is small in developed countries (88% vs 89%), larger in developing countries, most in Least Developed Countries (19% vs 31%)
- The proportion of women using the Internet is higher than that of men in only 8% of countries, while gender equality in Internet use is found in just over one-quarter of countries
- In the Arab States, Asia and the Pacific, and Africa, the gender gap has been growing

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Fig 4: Internet penetration rate for men and women, 2022 (Source: ITU, 2023)

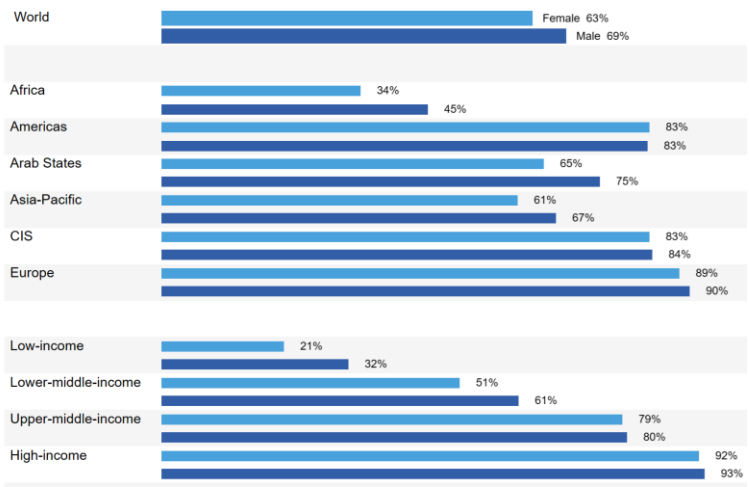

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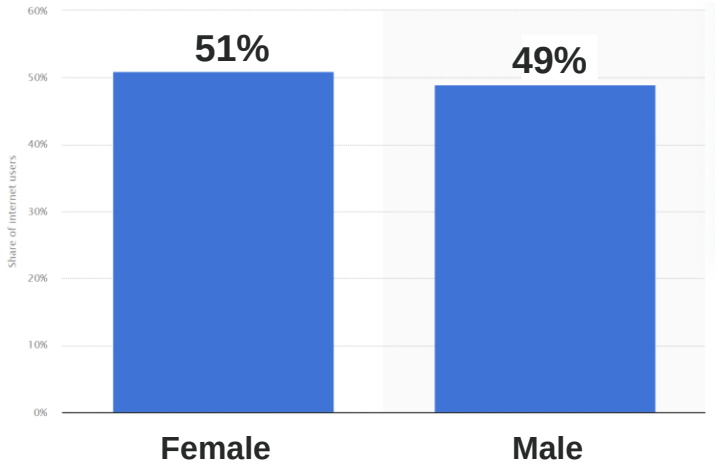
Fig 5: Internet users in the UK in July 2023, by gender



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Lack of skills a barrier to internet use

- An important barrier in the uptake and effective use of the Internet is a lack of ICT skills
- In 40 out of 84 countries for which data are available, less than half the population possesses basic computer skills such as copying a file or sending an e-mail with an attachment
- For more complex activities (classified as “standard skills”), such as using basic arithmetic formulae in a spreadsheet or downloading and installing new software, the proportions are even lower

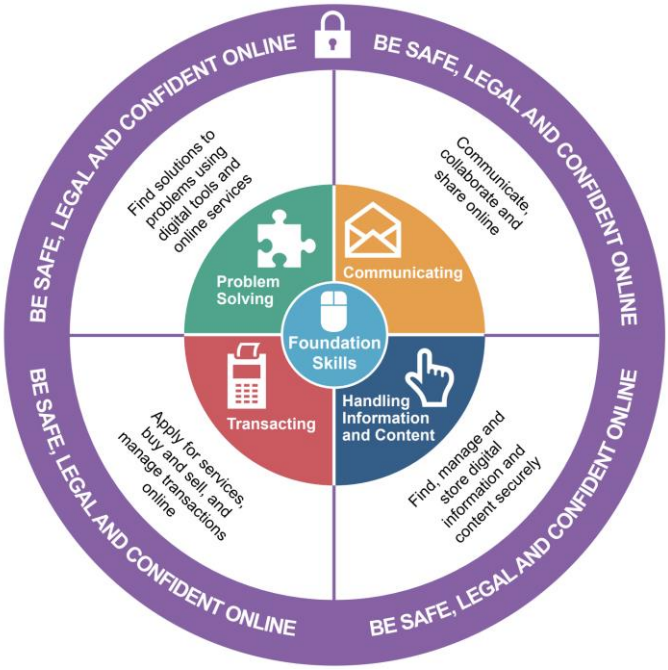

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Fig 6: UK Government Essential Digital Skills Framework

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What would you recommend as the best way to improve internet skills?

1. Amongst those in education?
2. In developed countries?
3. In the least developed countries?
4. What would you recommend for the older population?

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Growth in global internet speeds

- **Average global broadband download speed** measured from 30 May 2017 to 29 May 2018 was 9.10Mbps
- Average speed measured from 9 May 2018 to 8 May 2019 was 11.03Mbps
- Average speed in 2020 was 24.83 Mbps (first pandemic year)
- Average speed in 2021 was 29.79 Mbps
- Average speed in 2022 was 35.98 Mbps
- Latest average global broadband speed in 2023 is 46.79 Mbps
- **But** mobile broadband speeds vary wildly between nations!

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Fig 7: The fastest and slowest countries for broadband speed, 2023

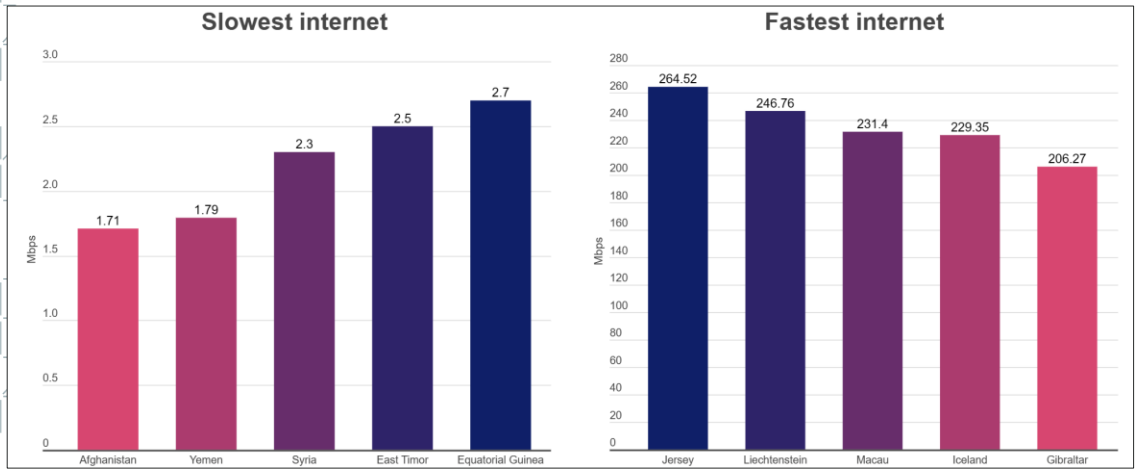

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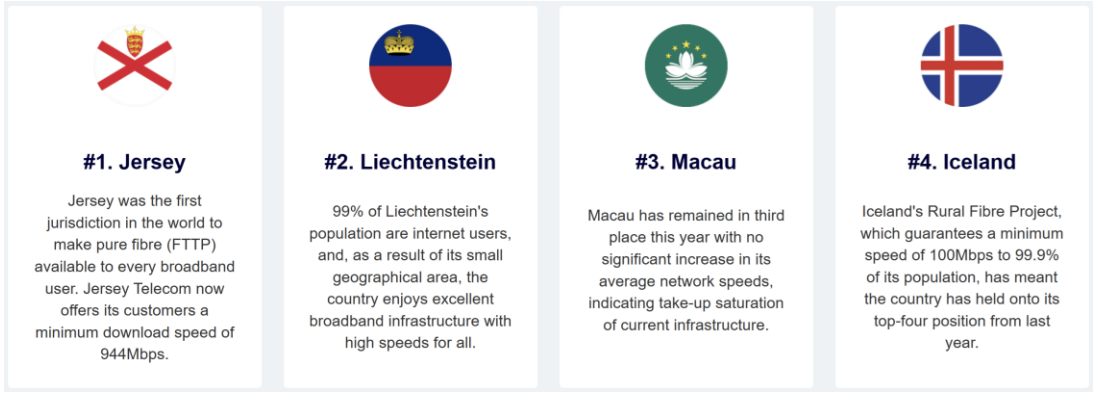
Fig 8: Countries with fastest internet speeds, 2023

- Interactive map of World broadband speeds 2023



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Perceived benefits of digital skills

- An recent survey (Lloyds Bank, 2023) indicated that, despite the fact that 99% of people have used the internet at least once in the past three months, 13% (6.8 million people) of the UK population still have the lowest digital capability. They are likely to struggle interacting with online services and are at risk of being left behind and left out of society
- Between 2020 and 2023, the number of people with the highest digital capability rose from 6.5 million to 14.1 million
- Since the beginning of the pandemic, two-thirds (65%) of those online tried something new for the first time, such as shopping and paying their bills online, or working from home

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Perceived benefits of digital skills

- However, the latest Lloyds Bank survey (2022) indicates that 17% (9.1 million people) of the UK population cannot undertake Foundation digital activities such as turning on a device, connecting to Wi-Fi, changing their password or opening an app by themselves
- Those not in employment are over twice as likely as the employed to lack the digital skills for work
- Those who are offline report most difficulty interacting with the NHS, followed by local council or government services and financial services
- Engagement with online banking services has enabled the most digitally capable to save up to £659 more per year

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Fig 9: Key figures on digital use in the UK (Lloyds, 2023)

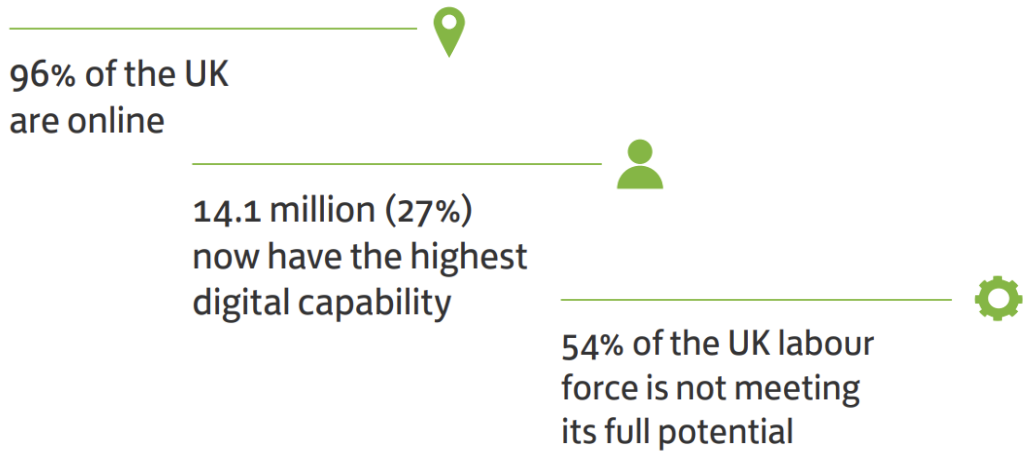

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Fig 10: UK digital capability segment characteristics (Lloyds, 2023)

VERY LOW 25%

13 million
- 65% are confident using the Internet
- Almost half earn up to £20,000 per year
- 77% feel confident protecting themselves from scams
- 21% shop around for cheaper deals
- Check their bank accounts five times a month

LOW 10%

5.2 million
- 82% are confident using the Internet
- Less than 4 in 10 earn up to £20,000 per year
- 78% feel confident protecting themselves from scams
- 32% shop around for cheaper deals
- Check their bank accounts nine times a month

HIGH 38%

19.8 million
- 93% are confident using the Internet
- Almost one-third earn up to £20,000 per year
- 84% feel confident protecting themselves from scams
- 30% shop around for cheaper deals
- Check their bank accounts 22 times a month

VERY HIGH 27%

14.1 million
- 95% are confident using the Internet
- Only 16% earn up to £20,000 per year
- 87% feel confident protecting themselves from scams
- 31% shop around for cheaper deals
- Check their bank accounts 48 times a month

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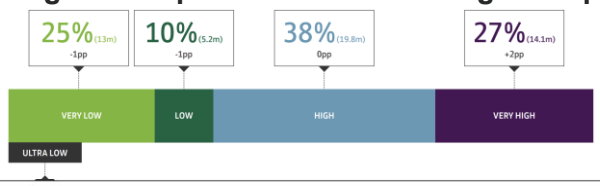
Fig 11: Proportion of the UK's Digital Capability Segments (Lloyds, 2023) (n = 998,745)



13% (6.8m) Ultra Low are a subset of the 'Very Low' with the lowest digital engagement score of 0-5.

6.8 million people (13%) have Ultra Low digital skills

Of those in the 'Ultra Low' group four years ago, 60% have remained in that segment ever since vs. 45% of the rest of the people in the very low digital segment, indicating it is harder for those people with the lowest digital behaviours to improve their digital engagement *(appendix 1D)*

Figure 6. Those in the Ultra Low digital segment are most likely to be:

In older age groups
Over two thirds of 'Ultra Low' are over 70 compared to one third of 'Very Low' and 'Low' groups.

Earning lower incomes
Almost three in five (59%) earn up to £20,000 per year.

Female
14% of females are in this segment vs. 12% male.

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Fig 12: Compared to the online, those who do not use the Internet are: (Lloyds, 2023)

Older
with an average age of 59 (vs. average age 43)

Retired
34% are retired compared to 7% of the online

Heath condition
Twice as many (49%) indicate a health condition (vs. 23% online)

No formal qualifications
One in four (24%) have no formal qualifications (vs. 7%)

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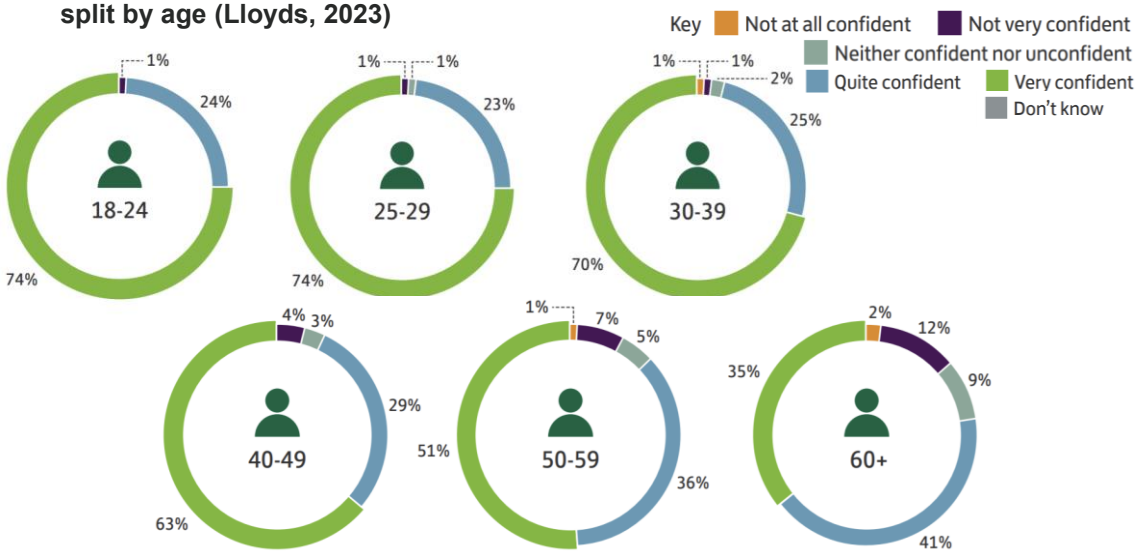
Fig 13: 'How confident would you say that you are in using the Internet?', split by age (Lloyds, 2023)



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Digital engagement statistics from the UK

- In February 2020, 96% of households in Great Britain had internet access, an increase from 93% in 2019 and 57% in 2006 (latest official figures, ONS, 2021)
- The generation gap between older and younger users is narrowing, but age remains the biggest indicator of whether an individual is online (Lloyds Bank, 2023)
- People with an impairment are 25% less likely to have the skills to access devices and get online by themselves

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UK digital skills example: Universal Credit

- Universal credit replaced six different welfare benefits and aims to make claiming easier
- You can make a claim for Universal Credit only online
- It is an example of a “digital by default” benefit
- Newspaper and social media stories cited hardship owing to digital exclusion and long waits
- Charities such as Good Things Foundation offer basic digital skills resources online

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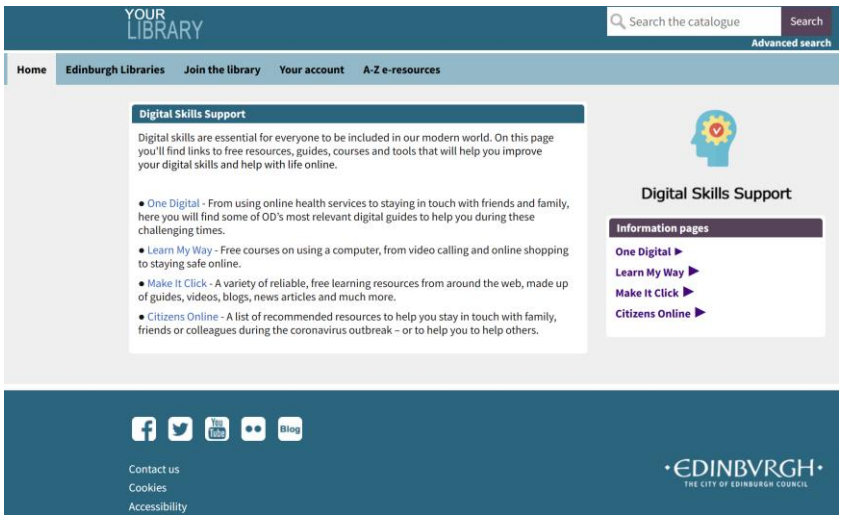
Fig 14: Edinburgh council digital skills support page



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Age and digital exclusion, UK example

- A study by Hu and Qian (2021) assessed social interactions across households and mental wellbeing during the pandemic
- They found that an older person who had only virtual contact during lockdown experienced greater loneliness and negative mental health impacts than an older person who had no contact with other people at all
- The problem was that older people unfamiliar with technology found it so stressful to learn how to use it, that it was more damaging to their mental health than simply coping with isolation and loneliness
- The Digital Participation Charter focuses on digital exclusion

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