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Digital Inequalities Amongst Digital Natives

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DIGITAL INEQUALITIES AMONGST DIGITAL NATIVES

Ellen J. Helsper

Introduction

The idea of young people as digital natives, effortlessly using Information and Communication Technologies (ICTs), has regained traction in the era of easy access and use. While much is written about young people’s immersion in digital media, less attention is paid to those who are struggling to participate fully online. That is, extensive research around digital inequalities amongst adults is not mirrored in similar attention to detail in studying inequalities amongst young people. This chapter examines the evidence for the continued existence of different types of digital inequalities amongst young people who grew up around tablets and smartphones.

Prensky famously coined the term digital native to describe individuals whose “brains have physically changed – and are different from ours – as a result of how they grew up. But whether or not this is literally true, we can say with certainty that their thinking patterns have changed” (2001, p. 1). Prensky’s digital natives (born after 1980) grew up with non-mobile, PC-based technologies. As they approach middle age, the digital landscape has changed; mobile phone diffusion increased exponentially, tablets and smart objects came onto the scene (Chaudron et al., 2017).

There has been extensive critique of the digital native concept (see Bennett, Maton, & Kervin, 2008; Jones & Czerniewicz, 2010; Ng, 2012). This chapter contributes to this ongoing debate by contesting the idea that all or most young people are able to use ICTs on an equal footing. The cross-national evidence presented in this chapter shows that, even with increased accessibility and ease of use, many so-called digital natives are not able to take advantage of the opportunities that ICT access and use can offer.

The general inequalities literature makes a distinction between first-, second-, and third-level digital inequalities (Nie, Sousa-Poza, & Nimrod, 2017; van Deursen & van Dijk, 2015). The first level at which a person might be disadvantaged refers to inequalities in the infrastructure and devices to which individuals have access. A distinction can be made between potential and actual access, that is, between the availability of infrastructure and devices in the neighbourhoods and households that people live in and the actual use of these devices. The second level concerns inequalities in the breadth and depth of ICT skills that people have and the ways in which they use these. There is an extensive literature on the different types of skills that should be considered (Hargittai, 2002; Van Dijk & Van Deursen, 2010) and an agreed-upon distinction between technical-operational, critical information-navigation, social-communicative, and content-creation
skills (Van Deursen, Helsper, & Eynon, 2016). For uses there is more variety in classifications but they can be largely grouped into information seeking, entertainment, financial or economic, communication, political or civic engagement, and identity-motivated activities (Eastin, Cicchirillo, & Mabry, 2015; Opgenhaffen & d’Haenens, 2012). Third-level digital inequalities refer to the inequalities in the positive and negatives outcomes of ICT use (Nie et al., 2017; Van Deursen & Helsper, 2015).

Theorisation in the field of digital inequalities argues that historical economic, social, cultural, political, and other vulnerabilities are replicated in digital inequalities (Helsper, 2012; Ignatow & Robinson, 2017). Empirical research confirms that this is indeed the case for adults (Ignatow & Robinson, 2017; Van Deursen, Helsper, Eynon, & Van Dijk, 2017). This approach is often lacking in research with youth and especially absent is the theorisation of different types of inequalities and how these translate into differences in use and outcomes (Brown & Czerniewicz, 2010; Selwyn, 2009). While not as theoretically grounded, there is a growing body of empirical evidence suggesting the existence of systematic inequalities amongst young people who have grown up in more digital environments (i.e., digital natives).

A review of the literature produces 122 articles in the last ten years with evidence for inequalities amongst digital natives based on household socio-economic status (e.g., Jara et al., 2015; Katz & Gonzalez, 2016a; Katz, Moran, & Gonzalez, 2018; Ono & Tsai, 2008; Thornham & Cruz, 2017; Tondeur, Sinnaeve, van Houtte, & van Braak, 2011; Vekiri, 2010; Zhang, 2015), and gender (e.g., Bilal & Jopect, 2014; Cotten, Shank, & Anderson, 2014; Hinostroza, Matamala, Labbe, Claro, & Cabello, 2015; Martinez-Cantos, 2017; McQuillan & d’Haenens, 2009; Pagani, Argentin, Gui, & Stanca, 2016; Steeves & Kwami, 2017; Wartberg et al., 2015). Inequalities based on ethnicity (e.g., Jackson et al., 2008; Janisse, Li, Bhavnagri, Esposito, & Stanton, 2018; Katz, Gonzalez, & Clark, 2017; Mertens & d’Haenens, 2010; Ono & Tsai, 2008; Oyedemi, 2015) and rurality (e.g., Awan & Gauntlett, 2013; Li & Ranieri, 2013; Liao, Chang, Wang, & Sun, 2016; Lichy, 2011; Steeves & Kwami, 2017) are also reported. Research done in the Global South (e.g., Arora, 2010; Awuor, Khisa, & Rambi, 2015; Chuna, 2014; Mo et al., 2013; Munyengabe, Zhao, He, & Hitimana, 2017) focuses mostly though not exclusively on access-related inequalities and education and civic participation questions. Research in the Global North emphasises inequalities in skills and frequency of use of ICTs for different activities (e.g., d’Haenens & Ogan, 2013; Katz et al., 2017; Martinez-Cantos, 2017; Mascheroni & Olafsson, 2016; Simoes, Ponte, & Jorgé, 2013).

There are few studies which directly focus on outcomes or third-level inequalities amongst youth. These mostly examine differences in educational performance between those who have and do not have access or those with higher or lower skills, rather than on different outcomes from the same uses of ICTs (Pagani et al., 2016). In addition, negative outcomes have been more broadly studied in internationally comparative studies such as the EU and Global Kids online projects than positive outcomes. More importantly, there is little analysis of datasets as regards inequalities in these negative outcomes experienced by young people. There is some evidence that the psychologically vulnerable and those more likely to have non-dominant positions in society (e.g., girls and ethnic minority youth) are more likely to experience negative outcomes from intense use (Helsper & Smahel, 2019) and that they are more likely to experience cyberbullying and harassment (Beckman, Hagquist, & Hellstrom, 2013; d’Haenens & Ogan, 2013; El Asam & Katz, 2018; Smith, Thompson, & Davidson, 2014) though these are not framed or theorised within an inequalities perspective. It remains to be seen whether the socio-economic and socio-cultural inequalities widely reported in the literature for adults regarding the positive outcomes achieved (e.g., Van Deursen & Helsper, 2017) can be observed amongst young people.
Methodology

This chapter aims to answer the question: Are there socio-digital inequalities amongst young people at the three levels of access, participation, and outcomes?

Very few studies exist that allow for empirical testing of the theoretical frameworks that link different types of socio-economic and socio-cultural inequalities to inequalities in access, skills, and use of ICTs and their outcomes. These are even more scarce if these issues are to be studied for youth across a variety of contexts. To overcome this gap, this chapter analyses cross-national data with information on a variety of aspects of young people’s backgrounds (socio-economic, socio-cultural, and personal well-being) as well as ICT access, skills, use, and positive and negative outcomes of use. Besides not including a range of disadvantage- and outcomes-based measures, most representative studies do not include the most vulnerable. This is a crucial gap if one wants to understand entrenched inequalities. Therefore, this international comparative work is combined with the analysis of a UK dataset which included a sizable sample of youth Not in Employment, Education, or Training (NEETs).

The Net Children Go Mobile study (www.netchildrengomobile.eu) allows for cross-national analyses of socio-digital inequalities in access, skills, uses, and negative outcomes amongst European digital natives (9- to 16-year-olds). It surveyed 3,500 internet-using children aged 9–16 and their parents in seven European countries. The fieldwork was conducted in 2013 in Denmark, Ireland, Italy, Romania, and the UK; and in early 2014 in Belgium and Portugal. The samples were nationally representative of internet-using youth.

The From Digital Skills to Tangible Outcomes (DiSTO) NEETs study in the UK (www.lse.ac.uk/media-and-communications/research/research-projects/disto/disto-youth) was specifically designed to examine inequalities in access, skills, uses, and beneficial as well as negative outcomes for advantaged and severely disadvantaged youth (14 to 24). DiSTO NEETs surveyed a nationally representative sample of 1,026 young internet users with an additional quota sample of 318 internet-using young people Not in Employment, Education, or Training (NEETs) (see Helsper & Smirnova, 2016).

The two datasets included different indicators that have been linked to systematic inequalities in adult research (e.g., Van Deursen et al., 2017). A general distinction is made between household and youth’s own socio-economic characteristics (i.e., caretaker education level, household socio-economic status, youth’s poverty history, and NEET status), as well as between individual socio-cultural characteristics (i.e., gender, age) and personal vulnerability (i.e., problem-solving capability, social self-esteem). Ideally all these datasets would have included a broader set of social and cultural indicators (e.g., social capital, ethnic minority/majority status) but this was not the case. Indicators are different for access, skills, use, and outcomes in the datasets analysed. Since the purpose of the analysis is to examine broader patterns of digital inequalities in different contexts this was considered acceptable though not ideal.2

Linear and logistic regression analyses were conducted related to access, skills, uses, and negative and positive outcomes.3

Results

Results of the analyses comparing young people with different socio-economic, socio-cultural, and personal well-being backgrounds are presented in relation to first-, second-, and third-level inequalities.

First-Level Inequalities

Both projects measured potential and actual access in relation to the number of devices, types of connections, and the locations at which young people have access to/have used the internet.
Socio-economic background is related to access in non-public locations in Europe (see Table 41.1). Wealthier youth are more likely to have wi-fi access at school, have access to more devices, and, while they use smartphones less, they use the internet more frequently at home. Youth from lower SES households rely on smartphones for private access. Youth from higher-educated households have access and use it at more locations, in particular at school.

Socio-cultural background. Older children have access to more devices and are more likely to have access at school, they use the internet at more locations, and are more likely to use it frequently at home and at school. However, younger youth are more likely to rely on the smartphone for daily connectivity. There are less strong relationships with gender and girls have access to fewer devices and are more likely to access the internet at school.

Youth's socio-economic situation is clearly linked to first-level inequalities. Those who received school meals (an indicator of poverty) when they were in education used the internet on fewer devices and at fewer locations, though they were just as likely to rely on their mobile phones for internet access (see Table 41.2). Those who stayed in education longer accessed the internet in a broader variety of locations, while those who dropped out of education and were not employed used it in fewer locations. As regards socio-cultural differences, girls were more likely to rely on their mobile phones for access while older youth used the internet on fewer devices and at fewer locations. Those who were less vulnerable (higher social self-esteem) were also more likely to access it at a variety of locations.

### Second-Level Inequalities

#### Skills

Net Children Go Mobile asked children to indicate whether they knew how to do 12 things on the internet and 11 things on their mobile phone (summarised in Table 41.3).

Socio-economic inequalities in skills were found for internet skills for household SES and for smartphone skills for household education level.

---

**Table 41.1 Inequalities in potential and actual access (Europe).**

<table>
<thead>
<tr>
<th></th>
<th>Potential access</th>
<th>Actualised access (use)</th>
<th>Daily use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No wifi at school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>1.06</td>
<td>0.12**</td>
<td>0.99</td>
</tr>
<tr>
<td>Socio-economic status (SES)</td>
<td>0.80*</td>
<td>0.07*</td>
<td>0.04</td>
</tr>
<tr>
<td>Age</td>
<td>0.92**</td>
<td>0.27**</td>
<td>0.38**</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>1.08</td>
<td>-0.06**</td>
<td>0.02</td>
</tr>
<tr>
<td>R^2/% correct</td>
<td>0.02/74%</td>
<td>0.11</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Note: * p<.05, ** p<.01.

Socio-cultural background. Older children were more skilled and girls indicate having fewer internet and smartphone skills.

The DiSTO studies have a variety of skills measures and, therefore, can give a more detailed picture of differences between vulnerable and more advantaged youth in the UK (Table 41.4).

Socio-economic background. Poverty (i.e., school meals), is related to lower overall skills levels but mostly to lower information navigation skills. Interestingly, level of education and NEET status do not make a difference for any of the skills. Nevertheless, informal literacy as measured by problem-solving skills is related to all the digital skills as well as confidence, indicating that those who are more adept at solving obstacles in everyday life have higher digital skill levels.
Socio-cultural background is related to skills in ways that do not follow the expected patterns: older youth indicate having only higher information navigation skills and girls have higher social and communicative skills but lower content creation skills.

Vulnerability, measured through emotional problems, is echoed in a lack of self-efficacy and lower skill levels, expressed especially in lower social- and communicative-ICT-related skills. However, a greater sense of social self-esteem was related to more content creation skills.

Use

The Net Children Go Online study measured how often in the last month children had undertaken a certain activity. A factor analysis showed that there were four areas in which they could be classified along the lines of traditional domains of resources (e.g., personal, social, economic, and cultural (see Helsper, 2012). It also measured a range of risky experiences composed of having seen violent or other potentially harmful material online, having seen sexual images and/or sexual messages they received (Table 41.5).

Socio-economic background. Those from higher-education households undertake commercial, cultural, and personal activities more often online and encountered fewer risks. Those from lower socio-economic-status households undertake commercial and cultural activities online more frequently, and had more risky experiences online.

Socio-cultural background. Older children undertake more activities in general and undertake commercial, personal, and social activities, but not cultural activities, more frequently. They also come across more risky content or interactions. Girls undertake slightly fewer activities overall, especially commercial and cultural activities, but undertake social activities more often and have more risky experiences.

The DiSTO NEETs study was designed around Helsper’s (2012) inequalities framework classifying activities in correspondence with different traditional resources and these thus

Table 41.4  Internet and smartphone skills (UK).

<table>
<thead>
<tr>
<th></th>
<th>Digital self-efficacy</th>
<th>High skills</th>
<th>Information navigation</th>
<th>Operational</th>
<th>Social and communicative</th>
<th>Content creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.06</td>
<td>0.00</td>
<td>-0.02</td>
<td>0.11**</td>
<td>-0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>-0.04</td>
<td>0.04</td>
<td>0.05</td>
<td>-0.03</td>
<td>0.16**</td>
<td>-0.13**</td>
</tr>
<tr>
<td>Poverty</td>
<td>-0.05</td>
<td>-0.07*</td>
<td>-0.05</td>
<td>-0.07*</td>
<td>-0.04</td>
<td>-0.02</td>
</tr>
<tr>
<td>Education</td>
<td>-0.01</td>
<td>0.00</td>
<td>-0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.03</td>
</tr>
<tr>
<td>NEET</td>
<td>0.05</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>Problem solving</td>
<td>0.07*</td>
<td>0.20**</td>
<td>0.10**</td>
<td>0.13**</td>
<td>0.10**</td>
<td>0.27**</td>
</tr>
<tr>
<td>Emotional problems</td>
<td>-0.14**</td>
<td>-0.06*</td>
<td>-0.02</td>
<td>-0.05</td>
<td>-0.08*</td>
<td>0.01</td>
</tr>
<tr>
<td>Social self-esteem</td>
<td>-0.03</td>
<td>0.05</td>
<td>-0.02</td>
<td>0.03</td>
<td>-0.01</td>
<td>0.15**</td>
</tr>
</tbody>
</table>

Note: * p<.05, ** p<.01.
mapped onto these different domains exactly. Economic and employment/education uses were separated in analysis because of the specific importance of the latter when studying NEETs (Table 41.6).

**Socio-economic background.** The well off were more involved on a monthly basis with all activities and NEETs were less likely to undertake cultural, social, and personal activities, while being equally engaged with commercial and employment-/education-related activities.

### Table 41.5 Online opportunities and risks (Europe).

<table>
<thead>
<tr>
<th></th>
<th>Commercial&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Cultural&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Social&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Personal&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Risky experiences&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>0.07&lt;sup&gt;*&lt;/sup&gt;</td>
<td>-0.16&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-0.08&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.01</td>
<td>-0.11&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Socio-economic status (SES)</td>
<td>-0.03</td>
<td>0.11&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-0.09&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Age</td>
<td>0.45&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-0.15&lt;sup&gt;**&lt;/sup&gt;</td>
<td>0.02</td>
<td>-0.37&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-0.48&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>-0.03</td>
<td>0.09&lt;sup&gt;**&lt;/sup&gt;</td>
<td>0.24&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-0.16&lt;sup&gt;**&lt;/sup&gt;</td>
<td>0.01</td>
</tr>
</tbody>
</table>

R<sup>2</sup> 0.2 0.04 0.06 0.16 0.32 0.16

**Note:** * p<.05, ** p<.01.


**Notes:**

a. Higher (factor) scores mean less frequent use (scales from several times per day to never).

b. Risky experiences should be distinguished from actual harm as they can lead to negative or positive outcomes and resilience in avoiding future harm.

### Table 41.6 Number of different activities undertaken monthly (UK).

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Economic</th>
<th>Employment and education</th>
<th>Cultural</th>
<th>Social</th>
<th>Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.03</td>
<td>.06</td>
<td>-.04</td>
<td>-.01</td>
<td>.06</td>
<td>-.01</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>-10&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-10&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-07&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-15&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-03</td>
<td>-02</td>
</tr>
<tr>
<td>Poverty</td>
<td>.10&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.11&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.12&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.09&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.06&lt;sup&gt;*&lt;/sup&gt;</td>
<td>.08&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Education</td>
<td>.03</td>
<td>.04</td>
<td>.06</td>
<td>.04</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>NEET</td>
<td>-11&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-.02</td>
<td>.00</td>
<td>-14&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-12&lt;sup&gt;**&lt;/sup&gt;</td>
<td>-.09&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Problem solving</td>
<td>.19&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.20&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.18&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.12&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.15&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.17&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Emotional problems</td>
<td>.02</td>
<td>.02</td>
<td>.01</td>
<td>.01</td>
<td>.00</td>
<td>.03</td>
</tr>
<tr>
<td>Social self-esteem</td>
<td>.15&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.13&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.14&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.14&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.12&lt;sup&gt;**&lt;/sup&gt;</td>
<td>.12&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

**Note:** * p<.05, ** p<.01.

**Source:** DiSTO NEETs – Helsper, E. J. (2016). *Slipping through the net: Are disadvantaged young people being left further behind in the digital era? A Prince’s Trust report.* Further information and reports available at: www.lse.ac.uk/media@lse/research/DiSTO/DiSTO-NEETs.aspx.
Traditional literacy in the form of problem-solving also related positively to the undertaking of all activities.

**Socio-cultural background.** While age did not relate to the types of activities undertaken, gender did. Girls undertook fewer activities monthly across the board with the exception of social and personal activities, where there was no difference.

**Vulnerability.** Emotional vulnerability did not, but social belonging did relate to the activities undertaken, with those with a greater social self-esteem more active across the board.

## Third-Level Inequalities

The Net Children Go Mobile study only measured negative outcomes and these could be classified as affective negative outcomes (i.e., upset) and concrete negative outcomes from use (e.g., foregoing interaction, unhealthy eating and sleeping habits) (Table 41.7).

**Socio-economic background.** There were no significant differences in negative outcomes (see Table 41.7), except for youth from households with lower education levels being more likely to have seen upsetting material online.

### Table 41.7 Negative outcomes of internet and smartphone use (Europe).

<table>
<thead>
<tr>
<th></th>
<th>Seen upsetting material</th>
<th>Highest level upset across negative experiences</th>
<th>Negative outcomes intense internet use</th>
<th>Negative outcomes intense smartphone use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exp(B)</td>
<td>β</td>
<td>Exp(B)</td>
<td>Exp(B)</td>
</tr>
<tr>
<td>Education</td>
<td>0.78**</td>
<td>0.08</td>
<td>1.14</td>
<td>1.06</td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>1.10</td>
<td>-0.08</td>
<td>0.97</td>
<td>1.00</td>
</tr>
<tr>
<td>Age</td>
<td>0.74**</td>
<td>-0.19**</td>
<td>1.67**</td>
<td>1.68**</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>0.59**</td>
<td>0.21**</td>
<td>0.98</td>
<td>1.05</td>
</tr>
<tr>
<td>R²/% correct</td>
<td>.04/82%</td>
<td>0.15</td>
<td>.07/79%</td>
<td>.08/60 %</td>
</tr>
</tbody>
</table>

*Note: * p<.05, **p<.01.


*Notes:*

a. Scales reversed, a higher score means less likely to have seen upsetting material.

**Socio-cultural background.** While older kids are more likely to have seen something that upset them, they are less upset by these experiences and they are also more likely to have negative outcomes from more intensive internet or phone use. Girls are less likely to have seen upsetting material but are more upset by them.

DiSTO NEETs included 23 positive outcome measures that asked not just whether a certain outcome was achieved but also how high their level of satisfaction was with the outcome. It also included a question about whether they came across something that bothered them and whether they had negative interactions with others online; the latter two questions were combined to be able to look at negative outcomes (Table 41.8).
Socio-economic background. Those who are less well-off achieve fewer high-quality outcomes, especially fewer economic and personal well-being outcomes, while those with higher education levels achieve higher-quality outcomes across the board with the exception of cultural outcomes. NEETs achieve fewer high-quality outcomes with the exception of personal well-being outcomes and, similarly, higher problem-solving skills are related to better outcomes.

Socio-cultural background. Older youth have more positive economic and social outcomes and girls are less likely to achieve positive social and cultural outcomes.

Vulnerability. Those with emotional problems are more satisfied with the outcomes they achieve from internet use. Social self-esteem is related to more negative outcomes but also to a wide range of more positive outcomes, with the exception of personal outcomes.

Table 41.8 Negative and positive outcomes of Internet use (UK).

<table>
<thead>
<tr>
<th></th>
<th>Negative</th>
<th>Positive</th>
<th>Economic</th>
<th>Employment / Education</th>
<th>Cultural</th>
<th>Social</th>
<th>Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.06</td>
<td>0.04</td>
<td>0.07*</td>
<td>-0.04</td>
<td>0.00</td>
<td>0.07*</td>
<td>-0.01</td>
</tr>
<tr>
<td>Gender (girls)</td>
<td>0.02</td>
<td>-0.04</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.08**</td>
<td>-0.07*</td>
<td>0.03</td>
</tr>
<tr>
<td>Poverty</td>
<td>0.02</td>
<td>-0.07*</td>
<td>-0.07*</td>
<td>-0.03</td>
<td>-0.04</td>
<td>0.02</td>
<td>-0.10**</td>
</tr>
<tr>
<td>Education</td>
<td>0.02</td>
<td>0.16**</td>
<td>0.19**</td>
<td>0.22**</td>
<td>0.01</td>
<td>0.09**</td>
<td>0.15**</td>
</tr>
<tr>
<td>NEET</td>
<td>0.00</td>
<td>-0.10**</td>
<td>-0.08**</td>
<td>-0.12**</td>
<td>-0.07*</td>
<td>-0.12**</td>
<td>-0.03</td>
</tr>
<tr>
<td>Problem solving</td>
<td>-0.04</td>
<td>0.14**</td>
<td>0.13**</td>
<td>0.12**</td>
<td>0.11**</td>
<td>0.17**</td>
<td>0.04</td>
</tr>
<tr>
<td>Emotional problems</td>
<td>0.03</td>
<td>0.11**</td>
<td>0.09*</td>
<td>0.07*</td>
<td>0.06</td>
<td>0.12**</td>
<td>0.07*</td>
</tr>
<tr>
<td>Social self-esteem</td>
<td>0.19**</td>
<td>0.09**</td>
<td>0.08**</td>
<td>0.11**</td>
<td>0.09**</td>
<td>0.10**</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Note: * p<.05, ** p<.01.

Socio-economic background. Those who are less well-off achieve fewer high-quality outcomes, especially fewer economic and personal well-being outcomes, while those with higher education levels achieve higher-quality outcomes across the board with the exception of cultural outcomes. NEETs achieve fewer high-quality outcomes with the exception of personal well-being outcomes and, similarly, higher problem-solving skills are related to better outcomes.

Socio-cultural background. Older youth have more positive economic and social outcomes and girls are less likely to achieve positive social and cultural outcomes.

Vulnerability. Those with emotional problems are more satisfied with the outcomes they achieve from internet use. Social self-esteem is related to more negative outcomes but also to a wide range of more positive outcomes, with the exception of personal outcomes.

Discussion

This chapter reviewed the existing evidence and conducted analyses of internationally comparative datasets on children and a UK dataset with vulnerable youth to answer the question: Are there socio-digital inequalities amongst the latest generation of digital natives at the three levels of access, participation, and outcomes? The short answer is yes, at all levels. Digital inequalities echoing traditional inequalities between advantaged and disadvantaged or vulnerable young people were shown to be present amongst the latest generation of digital natives (born after 2000). Socio-economic and socio-demographic factors continue to relate to the uptake of digital opportunities suggesting it is not generation but personal circumstance that determines uptake (Helsper & Eynon, 2010). While socio-economic background diminished in importance as the analyses moved from the first (access) to the second (skill and use) and the third (positive and negative outcomes of use) level of inequalities, socio-cultural and psychological types of marginalisation and vulnerability became more important.

In terms of access, it seems that wealth and other types of advantage are related to better access in private locations. Girls and disadvantaged groups are ‘forced’ into more public use because they have less private or exclusive personal/home access.
Socio-cultural factors such as gender and age played a role in determining skills, though more fine-grained analyses of different types of disadvantage and vulnerability in the UK suggest that this might be due to differences in informal literacy (problem solving) and socio-emotional vulnerability. Nevertheless, socio-economic, but especially socio-cultural and psychological factors, related strongly to how young people engaged with ICTs in both datasets. This confirms that even amongst digital natives ICT use is gendered and determined by offline identities, individual confidence, and social marginalisation.

There is much emphasis on the negative outcomes of ICT use in the literature for young people and relatively little on the positive outcomes outside of the education literature. Interestingly, socio-economic and socio-cultural statuses make little difference in encountering negative experiences but do make a difference in the achievement of positive outcomes in the UK study. The analyses confirm that psychological vulnerability might be related to more, and socio-economic vulnerability to fewer, positive outcomes (Helsper & Smirnova, 2019). There were surprises in the data on vulnerability; higher social esteem related to more negative outcomes (as well as to more positive outcomes) and negative outcomes were more common amongst older children. This might be because older youth and those who feel more respected use the technology more intensely, which logically leads to more possibilities of encountering risky content and thus negative outcomes (Helsper & Smahel, 2019; Livingstone & Helsper, 2010; Logar, Anzelm, Lazic, & Vujacic, 2016).

Conclusion

Digital inequalities between young people in access to and use of ICTs continue to exist even in an era of relatively low cost and widely diffused mobile media. Inequalities in use and outcomes of this use mean that inequalities will continue into the future. Elsewhere it has been argued that the socio-technical environments young people grow up in, and not the generation that they belong to, shape future digital inequalities (Helsper, 2017; Helsper & Eynon, 2010). These socio-technical ecologies are shaped by inequalities with long histories that are not changed overnight by the rise of a new platform, application, or activity. Whether a young person is able to take up the opportunities and manage the risks that come with living in increasingly digital societies depends on what they experience and power dynamics in their everyday lives.

The analyses presented in this chapter support this idea with limited data. This chapter could not explore compoundness – the interplay between different social, economic, and well-being inequalities and how these relate different types of ICT access, skill levels, and outcomes of engagement (Van Deursen et al., 2017) – privileging broad, multi-level comparisons on comparative datasets. While NEET youth are known to be multiply disadvantaged, the effect of the combination of their different types of disadvantage could not be untangled here. Better data collection is needed because current datasets are insufficient to study compound disadvantage. Future, carefully designed research with sufficiently large samples of severely disadvantaged youth would allow researchers to examine, for example, whether ethnic minority girls growing up in deprived neighbourhoods are more at risk of negative outcomes than other young people who differ from them in one or more of these characteristics.

In summary, it is likely that youth’s socio-digital ecologies are composed not just of parents and their parenting styles, which is the focus of much research in the Global North (e.g., Livingstone et al., 2017), but also of the neighbourhoods (Katz & Gonzalez, 2016b) and the national and regional contexts these young people grow up in (Drabowicz, 2014). These ecologies provide not only access and exposure to ICTs but also to value systems about what a young person (with certain characteristics) is supposed to do with ICTs and, as such, shapes the opportunities
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and the risks that they are aware of and consider appropriate for them (the socio-digital ecology in Helser’s 2017 definition).

However, most youth research is still too regionally or nationally constricted to draw conclusions about the applicability of digital inequalities theory. There is a dearth of data on ICT skills and outcomes of use especially for disadvantaged youth in the Global South. While individual countries have conducted studies (see www.globalkidsonline.net), no datasets are available that allow for comparative, multi-level analysis and thus it is difficult to know which findings presented here are Europe-specific and which are universal.

What is clear is that, to create a more equal future, the everyday lives of disadvantaged young people need to change both socially and technically to prevent the amplification and entrenchment of inequalities in increasingly digital societies.

Notes

1 Using the Boolean search terms in the Web of Science database TS=(youth OR children OR “young people”) AND TS= (“digital divide” OR “digital inequality” OR “digital exclusion”) NOT TS=(elderly OR adult). Deleting those references that talked about children in relation to adults rather than digital inequalities amongst young people. Search conducted in September 2018.
2 There is no space here to discuss the measures created, the websites give detailed descriptions of the studies and the author can be contacted for further detail on how measures were constructed.
3 Unless indicated otherwise the tables depict (standardised) linear regression coefficients (ß-value).
4 Risky experiences should be distinguished from actual harm, they can lead to negative or positive outcomes and resilience in avoiding future harm.

References


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