PROJECT FINAL REPORT

EYES UP

EarlY Exposure to Screens
and Unequal Performance

Early digital exposure, academic performance, and inequalities: new evidence and perspectives

EYES UP

PROJECT FINAL REPORT
CONTENTS

INTRO DUCTION

The public debate about the relationship between young people and media has intensified in recent years, becoming a central topic in the agendas of politics and the media. Certain events, recent publications, and growing difficulties at school and at home have helped put the spotlight on the issue[1].

Marco Gui

However, in the scientific community there is only a very partial convergence of opinions on these issues, reflecting the complexity of the phenomenon and, in part, the lack of experimental and longitudinal studies able to offer a clearer, more solid vision. Specifically, crucial aspects such as the long-term consequences on cognitive, emotional and social development of the early use of smartphones, social media and video games have not been sufficiently explored. Although some studies have highlighted negative correlations between early exposure to digital media and certain behavioural or psychological outcomes, the lack of longitudinal data means the possibility of establishing causal relationships is limited. This gap in the scientific literature represents a significant challenge, especially in light of the urgent need for immediate choices to be made in educational policy and practice.

1. Events include the Cambridge Analytica scandal and the Facebook Files, as well the 2020 documentary 'The Social Dilemma'. Publications include the US Surgeon General's report 'Social Media and Youth Mental Health', UNESCO report 'Technology in education. A tool on whose terms and Jonathan Haidt's book 'The Anxious Generation'.

We should add that over the last few years a number of studies have revealed a new phenomenon. The fall in the price of devices and internet connection (particularly for smartphones) is closing the digital divide – lack of internet access – among the younger generations. However, the dynamics leading to inequality are still at work, and the digital divide appears to have been turned on its head. Now children and adolescents from the most disadvantaged backgrounds are the ones spending more time online and living in environments where smartphones and social networks are more pervasive. Given the suspicions that intensive screen time causes problems, the question is whether we are witnessing a new form of 'hyperconnection inequality', and what can be done about it.

EYES UP (EarlY Exposure to Screens and Unequal Performance) is a one-year research project that aims to bring new, scientifically solid evidence to this debate. Launched in 2023, funded by the **Fondazione Cariplo** (under the 2022 Inequalities Research tender) and coordinated by the **Sociology and Social, Research department of the University of Milan-Bicocca**, it also involves the **University of Brescia, Sloworking association** and **Centro Studi Socialis.**

EYES UP studied the consequences of children's early exposure to digital tools and their academic performance over their long-term school career. The goal was to identify the impact of early digital media use on academic performance, analysing differences by gender, social background and subjective wellbeing. The research team used the experience of previous studies[2]. Although these were based on less extensive datasets and focused on smartphones, they had highlighted significant associations between the early use of devices and digital experiences and various adolescent wellbeing indicators. The results of the **EYES UP** study confirm the existence of significant negative impacts of certain early experiences with digital media, and are more solid from a scientific point of view. However, the results also highlight some positive areas to be developed in order to collectively put together a significant and effective process of digital socialisation.

The process brought together schools and local communities in a discussion about the evidence found. This report presents the main results of the research and the output from the public discussion about them. The conclusions take these rich sources of data and offer proposals and recommendations for educators and policy makers. The research data will be made available to the public and – after a period of academic embargo – will be published on the platform provided by DASSI (Data Archive for Social Sciences in Italy).

2. Gerosa e Gui (2023); Gerosa *et al.* (2024); Gui *et al.* (2023).

THEORETICAL BACKGROUND

Early access to smartphones and social media – Wellbeing, learning outcomes and digital inequality.

Chiara Respi

Early access to digital media is becoming more and more common[1], with younger and younger adolescents owning smartphones, a trend that was accelerated by the Covid19 pandemic[2]. Today boys and girls get a smartphone at around 11 or 12 years old[3], and create their first personal social media account at the same age[4].

While some scholars emphasise the benefits of the early use of digital media (such as educational apps) in the development of skills and creativity[5], others underline the risks, such as distraction, sleep deprivation and brain and cognitive changes[6].

So far the majority of empirical studies have concentrated on the volume of internet, smartphone and social media usage, while only a few have examined the impact of early use in accessing these technologies.
As far as wellbeing is concerned, the small number of studies available present contradictory conclusions about the link between the early use of devices and its impact on wellbeing, as also observed in internet and technology usage. Some studies have not found statistically significant associations between owning a smartphone and the age at which it was bought on the one hand, and depressive symptoms and sleep duration, quality and regularity on the other[7]. Others have found a link between early use of digital technologies and reduction in sleep and physical activity among children and adolescents[8]. Furthermore, early access to digital devices has a negative impact on psycho-social wellbeing, problematic behaviours and intellectual abilities[9], and is linked to problematic smartphone use (PSU), a type of

usage that interferes with daily life, involves pervasive device usage and presents a risk of addiction, both to the internet and to social media[10].

There are even fewer studies examining the relationship between early device ownership and academic performance among adolescents. Of these, a study by Gui and colleagues (2024) analysed the link between the age at which a young person received their first smartphone and the INVALSI tests taken by Italian secondary schools. The results show a negative association between early smartphone ownership and academic performance.
Specifically, students aged 15-16 who achieved the best results are those who received a smartphone after the age of 11.
A longitudinal analysis carried out by Dempsey and colleagues (2019) reached similar conclusions. The study measured the influence of early smartphone ownership on scores in reading and mathematics, demonstrating that children who reported already owning a smartphone at the age of 9 were more disadvantaged in their school development during adolescence than those who received one later.

Finally, Geros and Gui (2023) conducted a longitudinal study which shows that the effect of early ownership of a smartphone on the development of language competence among adolescents is nil overall. However, a negative impact was found among those who were already heavy users of digital media before owning a smartphone.

Early access to digital media has also been linked to variables that could represent sources of inequality, such as the origin of immigrant families, being female and belonging to less privileged socio-economic contexts, highlighting problematic models of use during adolescence[11]. There is evidence that families with a privileged background tend to protect their children from early and unsupervised use of technology with respect to less privileged families[12]. Similarly, smartphones are given to the children of less educated parents[13] at an earlier age, while there is no clear evidence in the literature about the age of first social media accounts.

There are very few studies examining the relationship between early ownership of digital devices and academic performance among adolescents, but early evidence tends towards a negative association between early ownership and learning.

As far as gender differences are concerned, despite the literature reporting growing parity in the levels of digital skills between young men and young women[14], **girls seem more at risk of certain problematic behaviours typical of permanent connection. Specifically, girls demonstrate more 'addictive' use of smartphones and social media[15], and are more likely to suffer from problems of physical comparison and self-esteem on social media[16]**.

Ethnic and socio-economic backgrounds also influence the habits and effects of social media use, although such effects may be mediated by factors such as parental guidance and digital literacy[17]. Some studies suggest that parents' level of education is a key predictor of how social media will be managed within the family, influencing the degree to which adolescents derive benefit or are damaged by their online activities[18].

1. Vaterlaus *et al.* (2021).
2. Mascheroni and Siibak (2021).
3. Gerosa *et al.* (2024); Sun *et al.* (2023).
4. Antheunis *et al.* (2016).
5. Bachmair and Pachler (2015); Valkenburg and Piotrowski (2017).
6. Madigan *et al.* (2019).
7. Sun *et al.* (2023); Vaterlaus *et al.* (2021).
8. Bruni *et al.* (2015); Edwards *et al.* (2015); American Academy of Pediatrics (2016).
9. Dempsey *et al.* (2020).
10. Gerosa *et al.* (2023); Gerosa *et al.* (2024).
11. Jaalouk and Boumosleh (2018); Vitullo *et al.* (2021); Gui (2015).
12. Ito *et al.* (2010); Livingstone and Blum-Ross (2020); Livingstone *et al.* (2015).
13. Gerosa *et al.* (2024).
14. Gui *et al.* (2021).
15. Kwon *et al.* (2013); Chen *et al.* (2017).
16. Twenge and Farley (2021).
17. Livingstone *et al.* (2017); Gui *et al.* (2023).
18. Livingstone *et al.* (2017).

RESEARCH DESIGN

The **EYES UP** project aims to analyse to what extent problematic digital media use in infancy is equally distributed among families in Lombardy, and how this phenomenon interacts with social origins, migratory backgrounds and gender in exacerbating existing educational inequalities measured in terms of competences and the risk of failing exams.

To do so, a sample of 6,609 second- and third-year upper secondary school students in Lombardy filled in a questionnaire, which was designed to reconstruct their relationship with digital media and their first experiences of it. The data collected were then cross-referenced with their INVALSI scores from second- and fifth year primary school and third-year lower secondary and second-year upper secondary school to create a longitudinal panel and estimate the effect of early digitalisation on academic performance (in Italian, English and mathematics) and on the relative inequalities.

The initial results were presented at the schools and to the educational community, while this research report contains the more in-depth analyses.

Chiara Respi

THE PROJECT WAS STRUCTURED AROUND 4 SPECIFIC RESEARCH QUESTIONS:

1 What impact does the age at which children and adolescents first start independently using smartphones and social media have on their educational results in the medium term (secondary school)?

2 To what extent do the above phenomena of early exposure interact with existing gender disparity, social origins and migratory backgrounds in widening gaps in academic performance?

3 Should digital media abuse be included in educational poverty indices?

4 Which policy indications have emerged from the field and from schools based on the results of the research?

The model shown in Figure 1 was used as reference to answer these two questions. It was then turned into a statistical analysis.

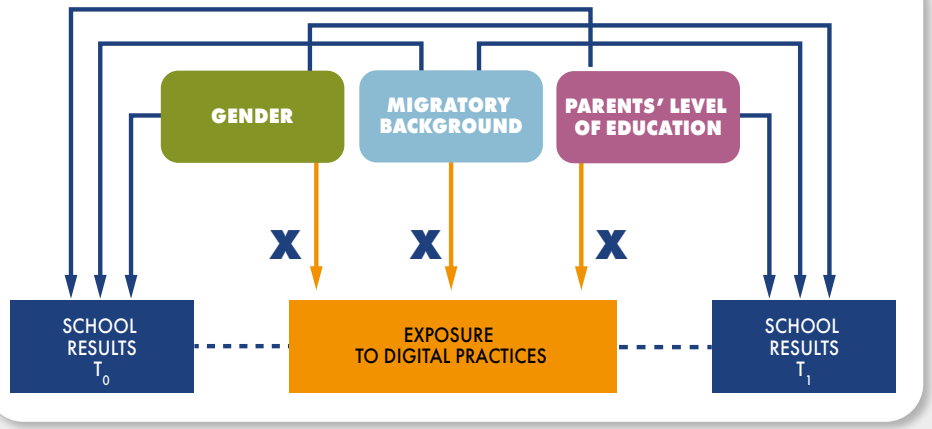


Figure 1 - Model showing link between exposure to digital practices and school results and interaction with gender, migratory background and parents' educational level.

The research was divided into five phases.
In phase one the sample was defined and twenty-eight schools were recruited (four of which are Vocational Training Centres – CFPs). All the upper secondary schools in the provinces of Brescia, Cremona, Mantua, Milan, Monza and Brianza were invited to take part. In phase two (from October 2023 to February 2024), the second- and third-year secondary school students were given an online questionnaire to fill in exploring their relationship with technology and the age at which they had their first important experiences of it (e.g. getting a smartphone).

Table 1 shows the distribution of the percentage of students of the relevant Lombardy province secondary schools (excluding the CFPs) by specialised curriculum, compared with the same distributions for the initial (enrolled) and final (respondent) samples of **EYES UP**. The result shows the first and second two distributions are essentially aligned, so the initial and final student samples can be considered representative of the population of the relevant Lombardy provinces by type of curriculum.

STUDENTS II AND III			
Type of curriculum	BS-CR-MI-MB-MN	Initial **EYES UP**	Final **EYES UP**
Academic	51	47	49
Technical	33	33	33
Vocational	16	20	18
Total	**100**	**100**	**100**
Total (N)	**99,815**	**7,083**	**6,150**

Table 1 - Percentage distribution of students enrolled by type of curriculum. Comparison between EYES UP sample and total of relevant Lombardy provinces.

N.B. The table does not include data from the CFPs. This is because it is not possible to calculate the number of students studying on Vocational Education and Training (IeFP) courses managed by the Lombardy Region in the provinces involved in the research due to a lack of comparable data

In addition, when looking at all the students from all the institutions including the CFPs (7,668), at the end of the survey the response rate was very high, at 86%.

The INVALSI data were then linked to the survey data (phase three). In phase four the initial results were returned to the schools in focus groups with teachers and head teachers. They were also presented and discussed with a small group of students, and a docufilm was produced to illustrate what was learned from the research. Phase five involved participation in national and international conferences, organisation of a final conference and other presentation methods at various levels (local and national authorities) and in various contexts.

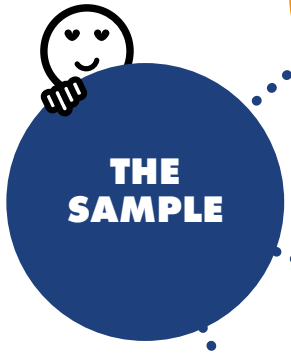
RESEARCH RESULTS

WHO ARE OUR YOUNG PEOPLE?

Elisa Angiola, Tiziana Pirola and Vanessa Trapani

SAMPLE PROFILE

The **EYES UP** project involved 6,609 boys and girls attending year two and year three at upper secondary school in five provinces of Lombardy (Milan, Monza and Brianza, Brescia, Cremona and Mantua).

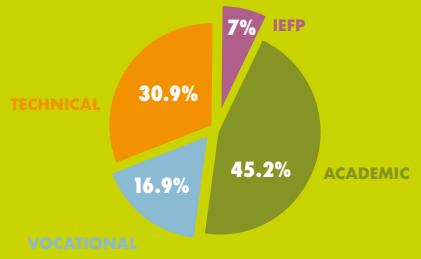


6,609 STUDENTS

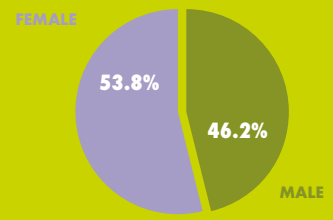
357 CLASSES

43 SCHOOLS

TYPE OF SCHOOL



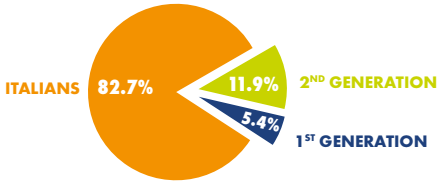
GENDER



Within our sample, 6.5% of male and female students were born abroad, and 17% of male and female students have parents of non-Italian origin.

46% of students have at least one parent with a secondary school diploma, while 33% have at least one parent with a degree, and only 21% have parents whose highest academic qualification is a middle (lower secondary) school certificate or three-year vocational training diploma.

ORIGIN

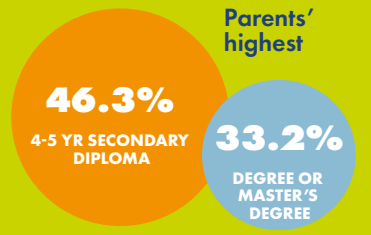


ITALIANS: born in Italy or abroad with at least one parent born in Italy.

1ST GENERATION: born abroad with parents born abroad.

2ND GENERATION: born in Italy with parents born abroad.

ACADEMIC QUALIFICATION



YEAR OF FIRST ACCESS TO SMARTPHONE AND WHEN SMARTPHONE RECEIVED

The following graph shows that the majority of boys and girls (45%) received their own smartphone when moving from primary to lower secondary (middle) school.
For almost all students access to messaging apps such as WhatsApp and Telegram (86.5%) takes place at the same time as they receive a smartphone. The same does not apply to all when it comes to opening their first social media account. There is a 15 percentage point gap between those receiving their first smartphone at 11 (the first year of lower secondary school) and those who already have a social media profile at the same age (30% of students involved in the survey).

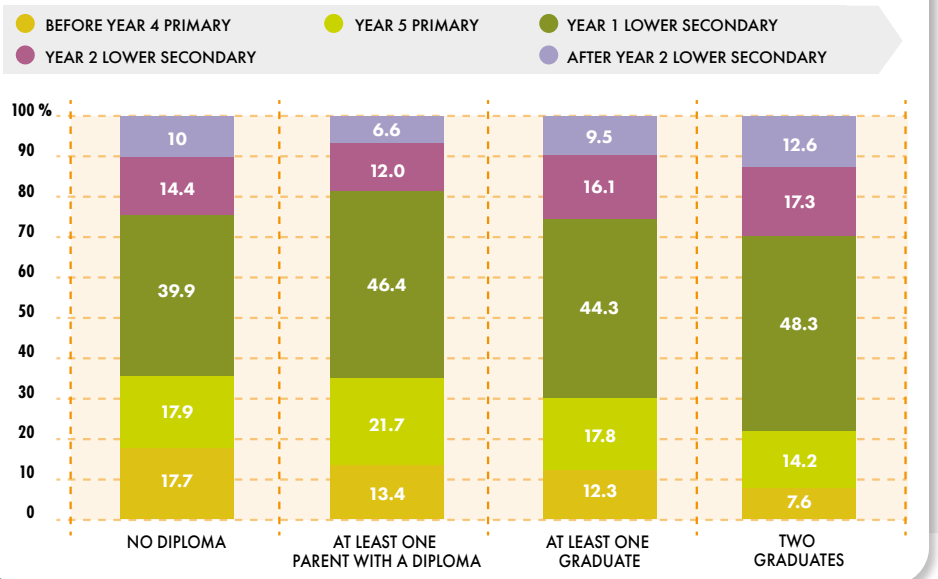
What the law says

ACCESS to social media

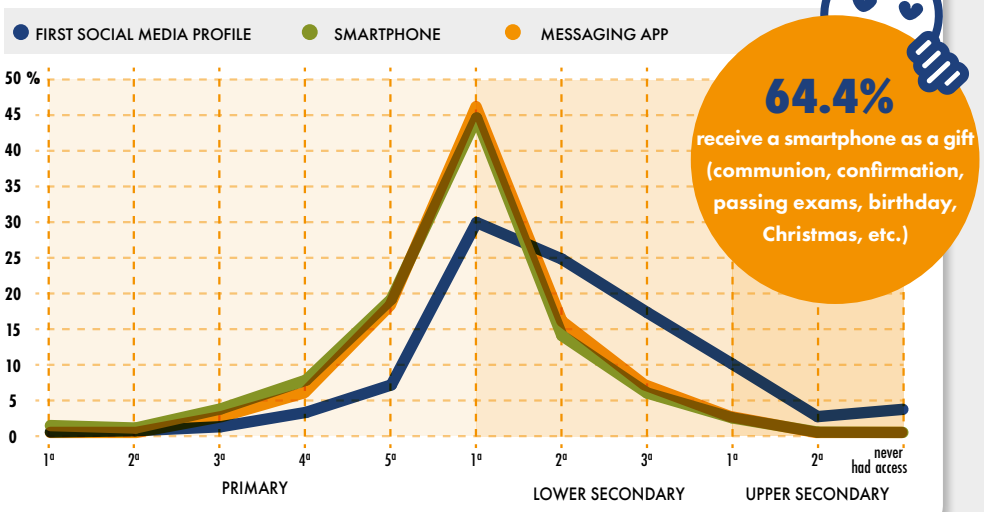
Legislative decree 101/208 transposed the EU data protection law known as GDPR (General Data Protection Regulation) in Italy, bringing the minimum age for consenting to personal data processing in Italy to 14.
This means that under-14s cannot subscribe to and use commercial platforms, including social media, without parental consent. Note that on 21 November 2023 the provisions approved by Italian communications regulator AGCOM came into force with Resolution 9/23/CONS of 25 January 2023.

Providers are now required to apply appropriate tools to screen inappropriate content at source and to block content reserved for adults.
This means that SIM cards in the name of under-18s are subject to a sort of 'state parental control', applicable on request also to householder networks and devices belonging to adults.

YEAR SMARTPHONE RECEIVED BY PARENTS' ACADEMIC QUALIFICATIONS



YEAR OF FIRST ACCESS TO TECHNOLOGY DEVICES



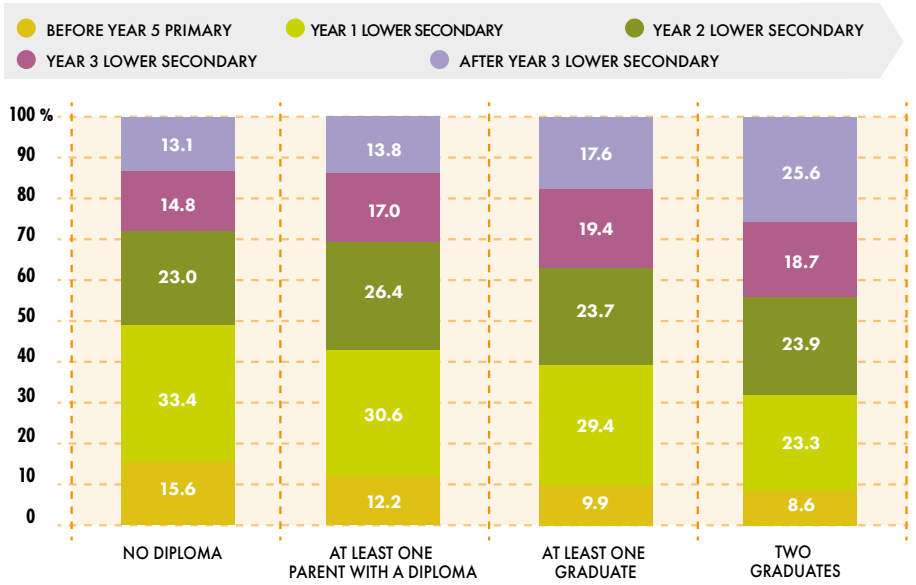
What the young people say

"I think children should be older than 11 before they are given a smartphone, and they should be told clearly how to use it and what the dangers are.

YEAR OF ACCESS TO SOCIAL MEDIA BY PARENTS' ACADEMIC QUALIFICATIONS

The higher the parents' level of education, the more families on average adopt a more cautious approach to their children having access to smartphones and to social media. The percentage of young people getting access to social media after year 3 of lower secondary school – and therefore at 14 as required by Italian law – rises from 13% in families where no parent has a secondary school diploma to 26% in families where both parents are graduates.

YEAR FIRST SOCIAL MEDIA ACCOUNT OPENED BY PARENTS' ACADEMIC QUALIFICATIONS



CONTROL OF CHILDREN'S ONLINE ACTIVITIES BY NATIONALITY, PARENT'S ACADEMIC QUALIFICATIONS AND CHILDREN'S SCHOOL

55%

The percentage of parents that **EXERCISE SOME FORM OF CONTROL OVER THE ONLINE ACTIVITIES** of their children.

55% of parents exercise some form of control over their children's online activity, such as reading chats and social media or using their smartphone. This figure is – again – higher among parents of Italian origin (57%), followed by parents of first-generation children (48%) and of second-generation children (46%).
In families with at least one parent with a degree, 60.5% control their children's online activity. The percentage is lower, at 56%, in families with at least one parent with a secondary school diploma, and 46% in families where no parent has a diploma. This provides further empirical confirmation of the hyper-connection disparity referred to in the introduction.
Control of online activity and the use of parental controls are more common among young people at an academic secondary school, followed by students at technical and vocational institutes, and finally CFPs.

PARENTAL CONTROL BY NATIONALITY AND PARENTS' ACADEMIC QUALIFICATIONS

45% of parents have applied parental control at least once on one or more of their children's devices. This figure is higher among parents of Italian origin (47%) than among parents of first-generation (40%) and second-generation students (35%).
In families with at least one parent with a degree, 54% use parental control on their children's devices. The percentage rises to 46% in families with at least one parent with a secondary school diploma, and to 43% in families where no parent has a diploma.

45%

The percentage of parents that have applied **PARENTAL CONTROL AT LEAST ONCE** on one or more of their children's devices.

ONLINE AND OFFLINE ACTIVITIES BY GENDER

Online activities

The data about the online activity of boys and girls show a rich and diverse picture of digital media usage. Everyday activities among our sample mainly comprise listening to music and watching short videos (TikTok, Instagram reels and YouTube shorts), followed by TV series, films and TV programmes (streamed on platforms such as Netflix, Amazon Prime and Disney+) and longer videos (e.g. videos on YouTube and livestreams on Twitch). We also see an important percentage of boys and girls who use the internet to find information about things they are interested in (94%) and to be informed (83%), while a smaller but sizable share actively participate in online discussions (46%), create videos or music (42%), write (18%) or manage spaces such as websites, blogs, pages and group profiles for which they create content (16%). Activities in which girls and boys produce

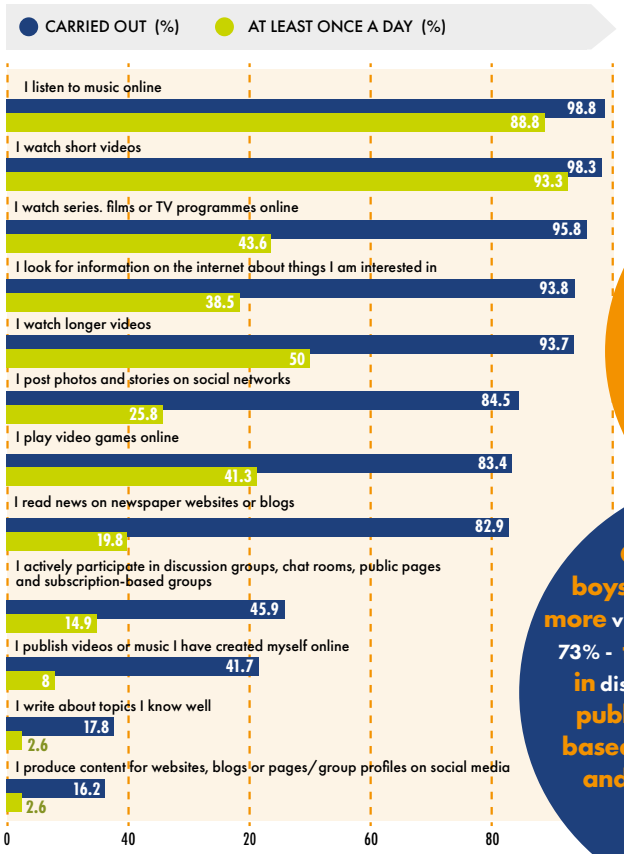
content rather than using it are less widespread, but at the same time considerably varied in type.

Looking at the differences in online activities between boys and girls, the main differences concern playing video games online, which plays a greater part in the daily life of boys. Compared with their peers, girls spend more time posting photos and stories on social networks and publishing videos and music they have produced themselves.

Offline activities

The most important use of free time spent offline is on activities such as going out with friends and family activities, personal care and shopping, going to the cinema and doing sport. Hobbies and reading also play an important part in the daily lives of boys and girls, while going to the theatre and exhibitions plays a far smaller part, as does taking part in courses or extra-curricular activities (not including after-school activities and tutoring). Finally, just over a quarter of the sample spend time as members of parish and religious groups or as volunteers and other forms of civic and political activity.

ONLINE ACTIVITIES

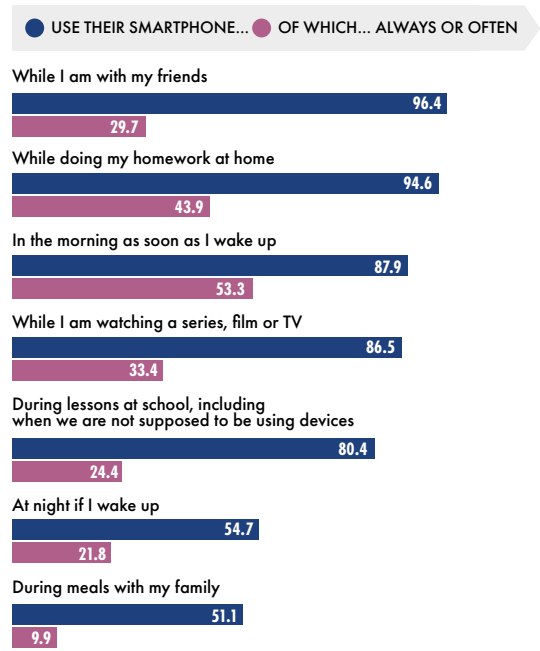


Girls are more likely than boys to post photos and stories on social media – 90% of girls compared with 78% of boys – and to publish original music or videos online – 51% compared with 31%

Compared with girls, boys, on the other hand, play more video games online – 96% against 73% - take part more frequently in discussion groups, chat rooms, public pages or subscription-based groups – 57% against 37% - and write about topics they are interested in – 21% against 15%

SMARTPHONE PERVASIVENESS

The concept of pervasiveness was measured using a scale already validated in previous research[1] , which refers to the frequency of smartphone use at specific times of the day considered crucial for adolescents' social and psychological wellbeing. It focuses on specific times and contexts in which smartphone use could interfere with academic performance. The scale does not measure a perception of addiction or estimate the time spent using the smartphone. Rather than defining use 'excessive' or 'pathological', the concept of pervasiveness refers to the fact that the smartphone 'colonises' moments of the day that should be dedicated to sleeping, studying or cultivating social relations with friends and family.



The data collected show in particular how smartphones invade sleeping time, often being the first thing young people do as soon as they wake up (for 53%, 'often' or 'always'). A smaller percentage (22%) say that they often or always use their smartphone when they wake up during the night. Finally, while 51% of young people say they use their smartphone during meals with their families, only 10% report this as a frequent habit, a figure we can interpret as a sign of the existence of family rules that prohibit or discourage the use of phones at the table.

We calculated the average score of all the elements comprising the pervasiveness scale to construct a pervasiveness index that goes from a minimum of 1 (when the average response is 'never') to a maximum of 5 (when the average response is 'always'). Looking at the difference by gender, we find that the average score is higher in girls (2.9) than in boys (2.7). However, when we compare Italian girls and boys with their non-Italian peers, the score is slightly higher for young people of non-Italian origin, with no difference between first- and second-generation (2.9), than for Italian young people (2.8).

Finally, if we analyse the data by type of school, we see that boys and girls going to academic secondary schools and technical institutes have slightly lower scores (respectively 2.7 for academic secondary schools and 2.8 for technical institutes) than their peers going to vocational institutes (2.9) or a CFP (3.0).

1. The *Smartphone Pervasiveness Scale for Adolescents* (SPS-A). For more details, see Gerosa *et al.* (2022) and supplementary materials.

CLUSTER ANALYSIS

The **EYES UP** research collected information about a vast range of online and offline activities, and the frequency with which they take place. The question that comes to mind is how pervasive use of digital media is linked to the various uses of free time by the boys and girls interviewed, and whether associations can be made with their subjective wellbeing.

Cristiana Paladini and Francesca Milzani

Given the quantity of data involved in the question, a statistical approach aiming to profile the young people was applied to describe the data. This is called cluster analysis.

Cluster analysis defines a broad category of statistical techniques useful for identifying similar, comparable observation groups, known as clusters, in a data sample. The observations are divided into clusters using algorithms that assign different observations to various clusters, and similar observations to the same cluster. Cluster analysis makes it possible to identify possible profiles based on the key characteristics (variables) selected. The key variables used here to divide the observations into clusters include pervasiveness and the frequency of online and offline activities. Given the number of these activities, free-time **activity macro-groups** were identified before the cluster analysis was carried out, as shown in the infographics (preliminary factor analysis was carried out to support effective aggregation).
The variables were converted into numerical values for the purposes of the analysis, so that the higher values corresponded to higher frequencies of activity and greater pervasiveness of digital devices.

THE ACTIVITY MACRO-GROUPS

ONLINE

ENTERTAINMENT/VIDEO GAMES
I play video games online
I watch longer videos

ENTERTAINMENT/RECREATION
I watch short videos
I listen to music online
I watch series, films or TV programmes online
I post photos and stories on social networks

FINDING INFORMATION
I read news on newspaper websites or blogs
I look for information on the internet about things I am interested in

CONTENT CREATION
I write about topics I know well
I publish videos or music I have created myself online
I produce content for websites, blogs or pages/group profiles on social media

OFFLINE

RELATIONSHIPS
I see my friends outside the home
I see my friends at home
I spend time with my family (e.g. cinema, shopping, family lunches/ dinners)

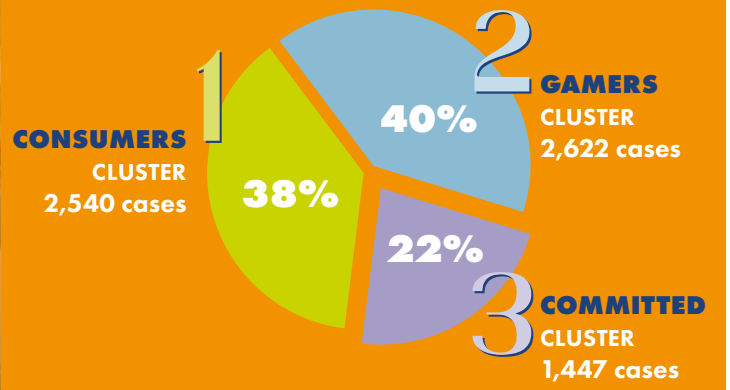
CULTURAL AND RECREATIONAL ACTIVITIES
I read
I go to the cinema
I go to the theatre/exhibitions
I take courses and/or other extra-curricular activities
I have a hobby

SOCIAL ACTIVITIES AND VOLUNTARY WORK
I am involved in civic and social activities

PERSONAL CARE ACTIVITIES
I go shopping
I take care of my body

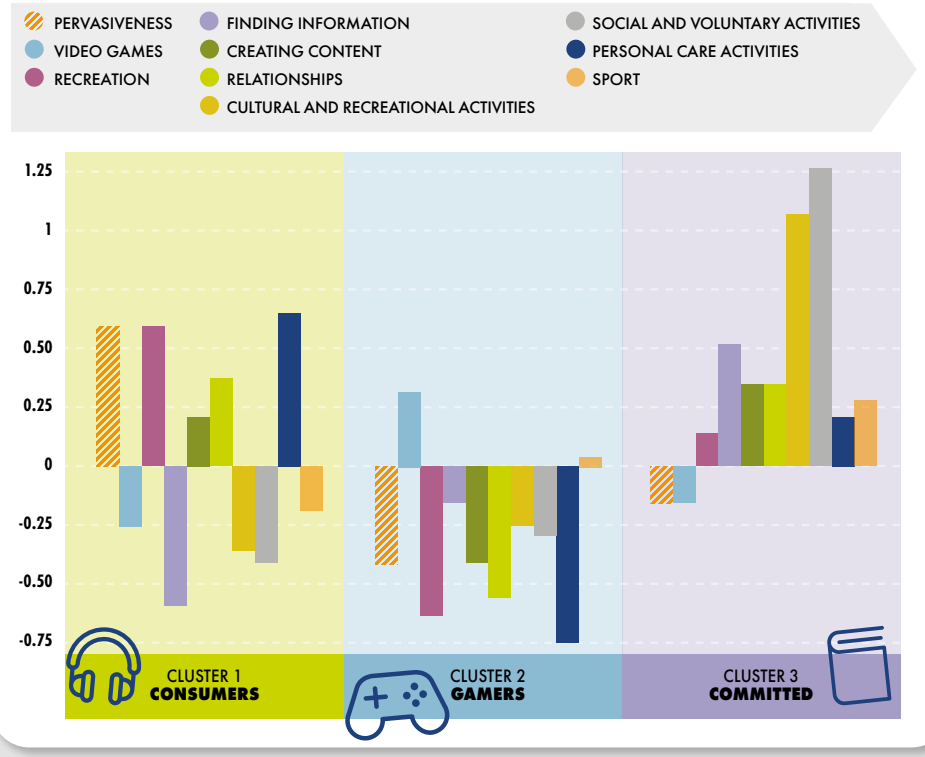
SPORT
I do sport/ physical activity

The clustering algorithm used identified three groups within the data sample:



There are no substantial differences between the clusters with respect to girls and boys' origins. The proportion of Italians and first- and second-generation non-Italians is practically identical in the two groups. The same cannot be said for division by gender: the first and third cluster have a larger proportion of female participation (female students representing 73% and 62% respectively), while the male component is prevalent in the second cluster (69%).

The following bar chart provides a visual comparison of the values of the key variables in each cluster.



N.B. The X axis of the graph shows the three groups identified, while the Y axis shows the standardised average scores of the observations in each cluster for the variables used and reported in the key. The numerical values of the variables involved were standardised before the cluster analysis so that the variables have an average of 0 (and standard deviation of 1). Given that the average is 0, this means that bars above the 0 line represent values above the sample average, while values below indicate scores below the sample average.

OBSERVING...

...the first cluster of the CONSUMERS, there are values above the sample average for online activities defined as markedly recreational, or the set of activities that presuppose passive use of digital media and smartphones (watching short videos, listening to music and watching TV series or films), or active use involving little time and commitment (posting photos and stories).
Also above the sample average is the frequency with which time is spent creating online content that requires a more committed active use and digital skills, such as writing about familiar topics, publishing videos or music and producing material for websites/blogs or pages/group profiles on social networks. The first cluster also shows the importance of relationships in free time, which includes seeing friends and family, personal care and shopping. Finally, there is more pervasive and greater use of digital devices than in the other clusters.

The second cluster of the **GAMERS** sees all online and offline activities being carried out at below-average frequency, with the exception of sport and especially video games (including watching long videos, especially streaming of gaming-dedicated content on platforms such as Twitch). Despite this, the pervasive use of digital devices is well below the sample average, with lower scores than the first and third clusters.

The third cluster, the **COMMITTED**, show more variety in the activities practised in their free time when compared with the previous clusters. As well as for recreation and content creation, their online activities also involved looking for information and reading news on newspaper websites and on blogs.
As well as spending their free time with friends and family, doing sport or dedicating themselves to personal care, their offline activities are well above the sample media when it comes to cultural and recreational occupations (reading, cinema and hobbies) as well as social activities and voluntary work. In this group pervasiveness is slightly below average.

Discussions with the boys and girls we met in the schools confirmed the existence of these three profiles in the young people's universe of today.

WELLBEING: HOW ARE OUR YOUNG PEOPLE DOING?

This was one of the first questions asked by adults and the educational community at the meetings organised to present the initial research results.

Cristiana Paladini
and Francesca Milzani

Despite the fact that wellbeing was not the central focus of the research, certain areas linked to **subjective wellbeing and self-efficacy** were explored. These areas were then linked to the results of the cluster analysis, in particular to the data on the use of free time and the pervasiveness of digital devices. **Subjective wellbeing is a fundamental component of psychological wellbeing, and has been defined as 'an internal barometer of 'how life is going' '**[1].

It comprises three aspects: life satisfaction, positive feelings and negative feelings. Self-efficacy is defined as **'an individual's belief in his or her capacity to execute behaviours necessary to produce specific performance attainments'**[2]. It is believed that self-efficacy plays a general role in mental health, determining the way people feel, think, motivate themselves and behave, thus supporting personal results, lowering stress and reducing vulnerability to depression and anxiety[3]. It has been suggested that three different dimensions of self-efficacy are involved in regulating boys' and girls' negative emotions: **academic, social and emotional self-efficacy**[4].

Academic self-efficacy refers to an individual's belief in their capacity to control their learning behaviours, master subjects and meet academic expectations,
Social self-efficacy refers to an individual's belief in their ability to be authentic and assertive in their relationships with their peers.
Emotional self-efficacy refers to their belief in their ability to deal with negative emotions[5].

1. Su *et al.* (2014)
2. Bandura (1997)
3. Tahmassian and Jalali Moghadam (2011); Muris (2002)
4. Muris (2001)
5. Muris (2001)

Subjective Wellbeing

Initially developed to measure one of the seven core theoretical dimensions of psychological wellbeing, the subjective wellbeing scale, along with the other dimensions of psychological wellbeing, is measured using the Comprehensive Inventory of Thriving for Children (CIT)[6].

Each subscale is defined by three indicators which are answered using a five-point Likert scale.
The psychometric properties of the Italian adaptation of the CIT have been reviewed in previous research[7], which provided evidence of the validity and reliability of the tool.

From the questionnaire...
'Indicate to what extent you agree with each of the following statements, choosing from the following scale, which goes from 1- Strongly disagree to 5 - Strongly agree'.

- ➜ In most ways my life is close to my ideal
- ➜ I am satisfied with my life
- ➜ My life is going well
- ➜ I feel positive most of the time
- ➜ I feel happy most of the time
- ➜ I feel good most of the time
- ➜ I feel negative most of the time
- ➜ I experience unhappy feelings most of the time
- ➜ I feel bad most of the time

6. Su *et al.* (2014)
7. Andolfi *et al.* (2017)

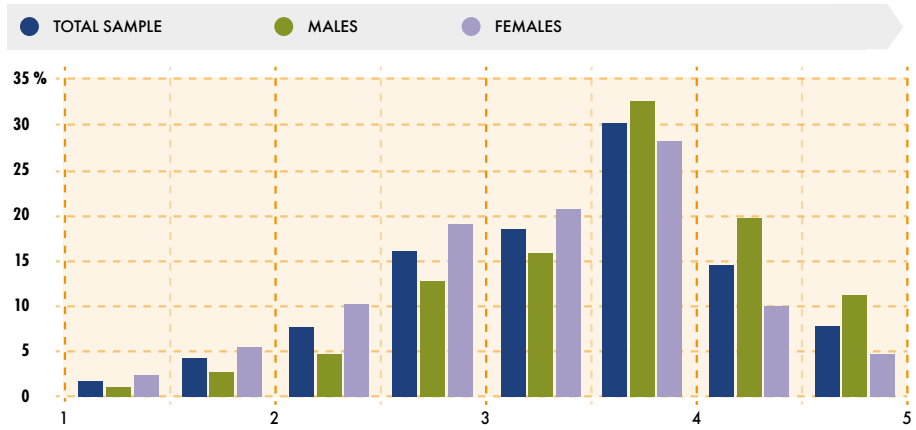
DESCRIPTIVE STATISTICS OF THE SCALES IN THE SAMPLE

Overall 75% of young people achieve scores of 3 or more on the scale used (1 to 5), with a total sample average of 3.4. The average score is slightly lower than observed in the previous literature studying wellbeing in young adults using the same scale[8]. With respect to gender, there is a significant difference between males and females. The average score of males is 3.6, while female students have an average score of 3.3. Slightly lower wellbeing scores among girls are normal in the literature on this subject. Finally, while there are no substantial differences between first-generation (3.28) and second-generation (3.33) non-Italians, the average score of Italian children is slightly higher than both groups (3.5).

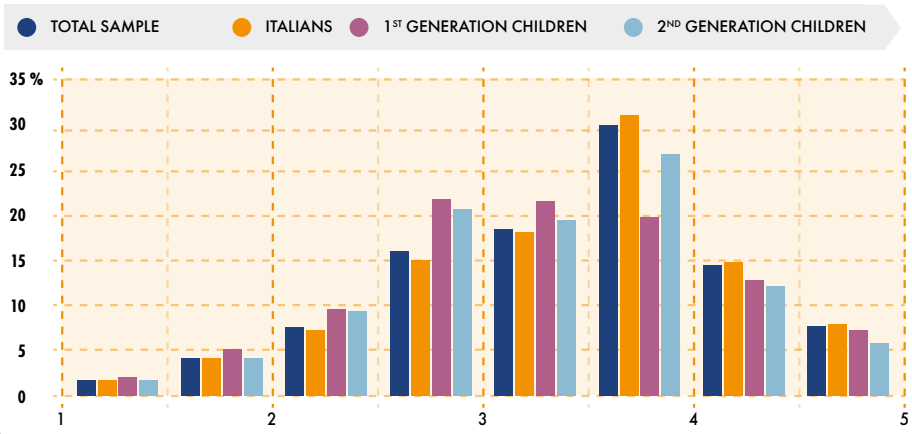
8. Andolfi *et al.* (2017) and Sorgente *et al.* (2020).

SUBJECTIVE WELLBEING

GENDER



MIGRATORY ORIGIN



Self-efficacy

From the questionnaire...

HOW WELL CAN/DO YOU...?

'Choose a number between *1 - Not at all and 5 - Very much,* selecting the appropriate response for each question.'

ACADEMIC SELF-EFFICACY

- ➜ Study when there are other interesting things to do?
- ➜ Study a chapter for a test?
- ➜ Succeed in finishing all your homework every day?
- ➜ Pay attention during every class?

SOCIAL SELF-EFFICACY

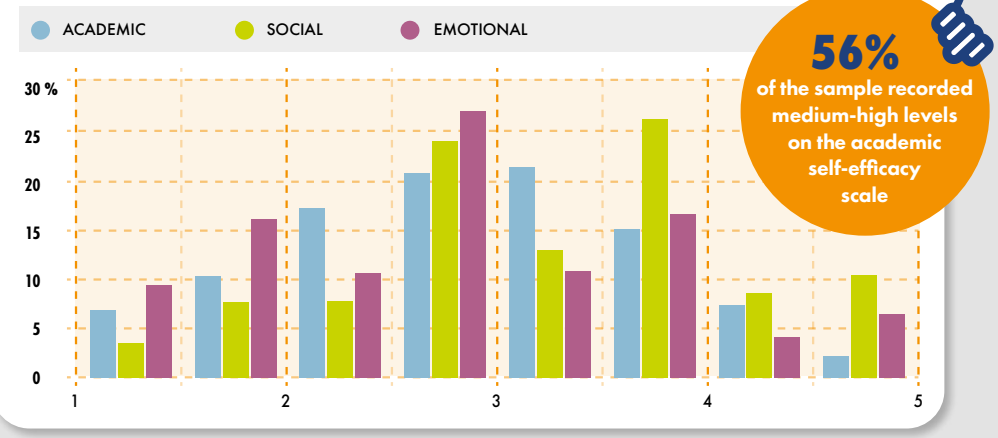
- ➜ Express your opinions when other classmates disagree with you?
- ➜ Become friends with other children?
- ➜ Tell other children that they are doing something that you don't like?

EMOTIONAL SELF-EFFICACY

- ➜ Succeed in suppressing unpleasant thoughts?
- ➜ Succeed in cheering yourself up when an unpleasant event has happened?
- ➜ Give yourself a pep talk when you feel low?

With respect to **self-efficacy in the academic dimension, approximately 56% of the sample recorded medium-high levels** on the scale (scores of 3 or more). Girls (3.07) scored slightly higher than boys (2.89) in this dimension, as did Italians (3.00) compared with first-generation (2.99) and second-generation (2.91) non-Italian students.

SELF-EFFICACY DIMENSIONS COMPARED



With regard to social self-efficacy, scores were higher than in the academic dimension. The overall sample average was 3.32, with 71% of young people scoring 3 or more.
The previously observed trend was confirmed when comparing the average of the interviewees divided by origin (Italians 3.35, first-generation non-Italians 3.10, second-generation non-Italians 3.20).
However, girls score slightly lower than boys (averaging 3.24 and 3.41 respectively).

Finally, the self-efficacy dimension in which the overall sample average is lower is emotional self-efficacy, where the overall sample average is 2.88. As observed in the context of psychological wellbeing, there is a significant difference between the average scores for boys and girls. Boys score an average of 3.13, while the average score for girls is 2.67.
There are no substantial differences between the average scores of Italian students (2.87) and first-generation (2.91) and second-generation (2.94) students of non-Italian origin.

TABLE 2 | **AVERAGE SELF-EFFICACY SCORES DIVIDED BY GENDER AND MIGRATORY ORIGIN**

Self-efficacy	Academic	Social	Emotional
SAMPLE	2.99	3.32	2.88
Boys	2.89	3.41	3.13
Girls	3.07	3.24	2.67
Italians	3.00	3.35	2.87
1st-generation students	2.99	3.10	2.91
2nd-generation students	2.91	3.20	2.94

SUBJECTIVE WELLBEING, SELF-EFFICACY AND ASSOCIATIONS WITH THE CLUSTERS

Here the data for subjective wellbeing and self-efficacy are linked to the results of the cluster analysis. The cluster analysis was used to create macro-profiles dividing the young people from the sample into three groups (consumers, gamers and committed) based on how they spend their free time and digital device pervasiveness.

THE QUESTION IS:
Can belonging to a given cluster be associated with lesser or greater levels of subjective wellbeing and to self-efficacy dimensions?

The analyses carried out take into account students' gender and origin, as well as the type of school they go to, their parents' level of education, their family type and some information about the family's financial situation.
There are no substantial associations when it comes to **SUBJECTIVE WELLBEING**. On average **consumers** have higher scores than **gamers**, but lower scores than the **committed**.

What the young people say

"I think that this kind of research is not only useful to collect general statistics about how Generation Z is doing, but also to get young people to think about things that they don't often really think about, so they can realise how they are and how their lives and education are going, and get a kind of 'progress report' on their current situation.

More important associations can be found in the context of **SELF-EFFICACY.** As far as **ACADEMIC SELF-EFFICACY** is concerned, where the above conditions are equal, '**gamers**' and the '**committed**' are on average associated with higher belief in their academic capacity.
The same cannot be said **SOCIAL SELF-EFFICACY.** While **consumers** and the **committed** present similar levels on average, **gamers** have a lower score.

Finally, being **committed** is associated with higher average levels of **EMOTIONAL SELF-EFFICACY**.
Where conditions are equal, boys and girls belonging to the **consumers** cluster but especially to the **gamers** cluster score lower on the scale.

IN CONCLUSION

We can summarise by saying that the **committed** cluster (those who use media creatively but also carry out significant activities in their offline time) are the profile with the highest level of satisfaction and self-efficacy, while the other two clusters present specific weaknesses: the **consumers** (who use the internet more passively) in academic self-efficacy and the **gamers** (focused on online gaming) in social self-efficacy and subjective wellbeing. The results confirm the associations between the active use of digital media, involvement in offline social activities and wellbeing already found in the literature.

9. Meier and Krause (2023); Van de Casteele *et al.* (2024).

DIGITAL PRECOCITY,
ACADEMIC PERFORMANCE AND INEQUALITIES

Descriptive evidence of the relationship between technology and learning.

Giovanni Abbiati

We will now move on to examine the relationship between **digital precocity, competence in mathematics, Italian and English, and educational inequalities.** To do so we combined the anonymised questionnaire data with the data collected by INVALSI[1], the Italian Education and Training Assessment Institute, on students' competence in Italian, mathematics and English[2].

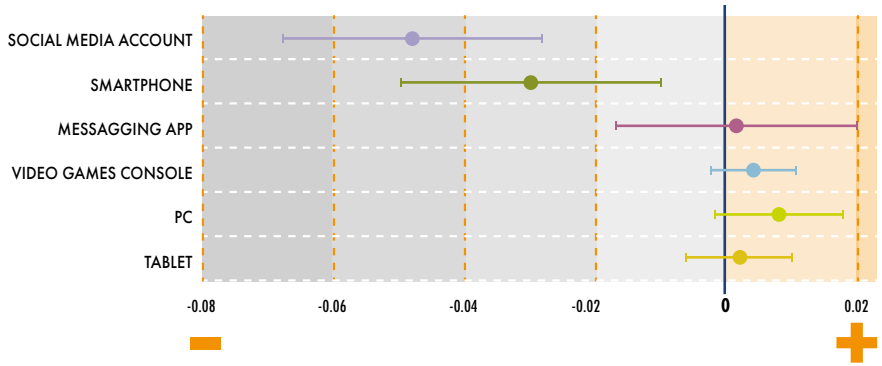
In the first place, we asked ourselves whether and to what extent the use of technology during childhood is correlated with competences.
The question is not an idle one. We are surrounded by technology with a wide range of characteristics and functions, which are potentially very useful. One example is the internet, which can offer access to a vast quantity of digital libraries. Then there are messaging apps, which can help the transition to independence. On the other hand, there is a debate raging about the potential for distraction and for 'addiction' to such tools for children.

The following analyses were carried out on together with their INVALSI data, for a total of 5,593 students. The effects were calculated on subsamples of students grouped by their characteristics and the age at which they first opened a social media profile. In figure 2 we try to give an initial response to the question by estimating the correlation between **competence in Italian measured at the end of the first stage of education** (lower secondary year 3) **and the number of years students have had a relatively common set of tools and applications** (computer, tablet, smartphone, video game console, messaging app and first social media profile).

Each coefficient, estimated separately for each type of technology, measures the relationship between an additional year of ownership of

1. INVALSI collects data about competence in Italian and mathematics from all students at Italian schools at the end of primary school year 2 and year 5, lower secondary year 3 and upper secondary year 2 and year 5. For some years they have also collected data about competence in English at the end of primary school year 5 and lower secondary year 3.
2. Below we show the data on skills in a standardised scale (i.e. variables with a mean of 0 and standard deviation of 1) in order to be able to compare different years.

Figure 2 | **RELATIONSHIP BETWEEN YEAR TECHNOLOGY RECEIVED AND COMPETENCE IN ITALIAN IN LOWER SECONDARY YEAR 3**



N.B. Skills are expressed in standard deviations. The dot and the bar represent the precise estimate of the association between arrival of the technology and Italian language skills, and the confidence interval at 95%. Errors clustered by school.

There is a negative association between the age at which a smartphone is first owned or a social media profile is opened and learning. Associations with messaging apps, computers, video games and tablets are weak or absent.

that specific technology and competences. A negative coefficient (located to the left of the blue line, which shows no relationship) indicates a negative relationship. Conversely, a positive coefficient indicates that early use is associated with greater competences. The horizontal bars show the confidence interval of each estimate[3]. As can be seen, the age of access to some technologies seems to have a very weak correlation with competences. For tablets, video games and messaging apps the relationship is estimated to be close to zero. For computers, the connection is weakly positive. Two specific technologies are an exception. These are smartphones and the opening of a social media profile, which show very marked negative correlations. In other words, the longer one waits before giving a child a smartphone or allowing them to open a social media profile, the greater the students' competences at the end of the first stage of their education. To take the most extreme example, the data show that one year less in age at the time a student's first social media account is opened is associated with 0.05 less standard deviations in their performance in the third-year INVALSI Italian test. This association is considered relevant in the literature. The results for mathematics, not shown here, are practically identical.

3. To make estimation of the association more solid, each statistical model was estimated net of a series of factors that are known to influence the acquisition of skills, such as the previous skill level (measured in primary year 2), perceived financial difficulties, parents' level of education, migratory origin, type of family (single- or two-parent), nursery school experience and year of birth.

THE EFFECT OF OPENING A SOCIAL MEDIA PROFILE ON LEARNING

ESTIMATE

Research into the effects of the use of digital media on the lives of young people is often criticised for being 'correlational' and not 'causal'. The estimates presented above come under the former category and can be understood only as associations. However, below we will focus on estimating the causal impact of opening a social media profile on competences, in line with the indications of the scientific literature, the goal of the research project and, as we shall see, with some of the constraints of our database[4 5] .

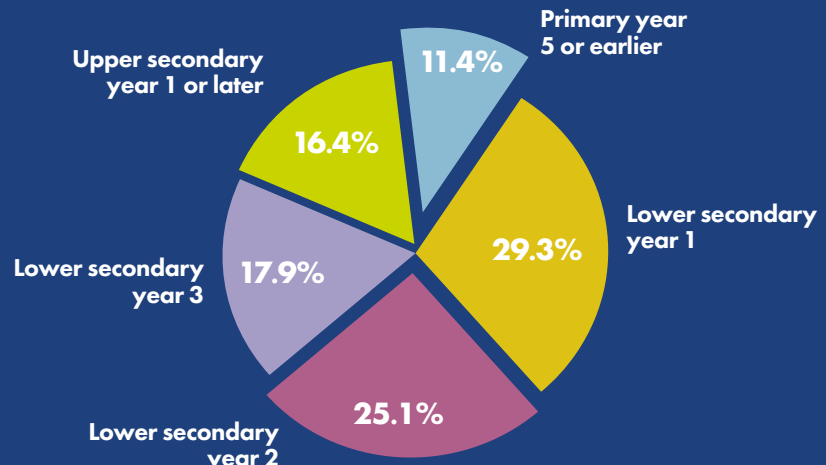
To estimate causal links we have to use different statistical models. Specifically, we combined two separate techniques, exploiting the wealth of information provided by the questionnaire and the connection with the INVALSI results at four specific time-points: statistical matching and the difference in differences method.

Statistical matching allows the creation of groups of individuals comparable for a series of observable characteristics that are known to be related both to skills and to the early opening of a social media account: the family's socio-economic position, migratory origin, student gender, family type, and English, Italian and mathematics skills acquired at the end of primary school year 5.

The difference in differences method makes it possible to estimate the effects of a 'treatment' - in our case opening a social media profile - by comparing the temporal changes in skills in

4. The question in the questionnaire specified considering opening a personal profile, not using a parent's profile. From this point of view, we are probably underestimating the phenomenon.
5. Given its specific nature, WhatsApp was not included as a social network.

STUDENTS' CLASS WHEN THEY OPEN THEIR FIRST SOCIAL MEDIA PROFILE



What the young people say

I mainly use my phone to study, and to organise my time. At the same time, I feel addicted to my phone. At the end of the day I feel like I have wasted lots of time and not achieved the goals I have set myself. It helps me study, but at the same time holds me back.

My performance at school is also due to using technology, which can be often be incredibly useful. I am convinced that school should dedicate time to teaching us how to use it properly and not ban it and treat it as a source of evil and problems.

relation to exposure to the 'treatment'. The combined adoption of these two techniques means that, with due care and under certain assumptions, the estimates generated by the statistical models may be interpreted in a causal sense also in non-experimental contexts.

To identify the comparison groups, we observe the distribution of the class to which the student belongs when their first social media profile is opened (see the graph on the previous page).

The majority of students open a profile while they are at lower secondary school, with a peak in year one. A minority (16%) waits until the legal age required by law (GDPR) and recommended by psychology associations, upper secondary year 1 (approximately age 14). A minority already has a profile in primary school.

Given these figures it is therefore important to understand whether the age at which families normally allow their children to open a social media profile (compared with the age at which it is legal) has an impact on (and not only an association with) learning levels. To understand this, we use the technique presented above to compare two groups of students: those who opened their profile in lower secondary year one, which we define as early access, and those who waited until the end of their first stage of education, which we have called legal access.

The choice of these two groups also responds to a practical need, which is to incorporate the structure of the INVALSI tests into the research design. The tests carried out at the end of primary year 5 may be used to statistically 'align' the groups and therefore to have a benchmark measurement before the early access group creates a social media profile. The tests carried out at the end of the first stage of education are scheduled before it is legal to open a social media profile. The tests in primary year 2 may instead be used to show the solidity of our approach.

We expect that between primary year 2 and year 5 - i.e. before the differences linked to social media can have an impact - there are no differences between the groups, so their skill level is comparable[6]. As stated above, this possibility does not apply to English, which is not tested in primary year 2.

6. The data collected from the test administered in upper secondary school year 2 are still being analysed.

HOW TO INTERPRET THE FIGURES ABOUT THE IMPACT

The figures on the following pages present the results in graph form as explained below. The X-axis shows the years the INVALSI tests were carried out.

The Y-axis shows the standardised scale on which the skills were measured.

For each of the years in which the tests were carried out, the mean skills of the students sampled were set at 0 to make the graphs easier to read. The change over time of the mean level of skills in the early access group and the legal access group is shown by the green and blue lines, respectively. The bars surrounding the estimates indicate the confidence interval. There are no confidence intervals for primary year 5 as the two groups of students have been matched, i.e. made statistically identical based (among other things) on their skills. The effect of three years of exposure to social networks can be observed in the eighth year of school and is shown when the two groups do not touch. It is important to check on every graph that the confidence intervals in primary year 2 overlap, because this is indicative of the fact that the differences observed in lower secondary year 3 do not incorporate pre-existing differences.

Figure 3 shows the effects of opening a social media account on Italian, mathematics and English for the general sample. We can see that in Italian and mathematics, subjects for which we have three time-points, the assumption of a parallel trend between the groups is credible, as the estimates for primary year 2 are extremely similar between the two groups. However, in lower secondary year 3 the two trends diverge considerably in both Italian and mathematics.

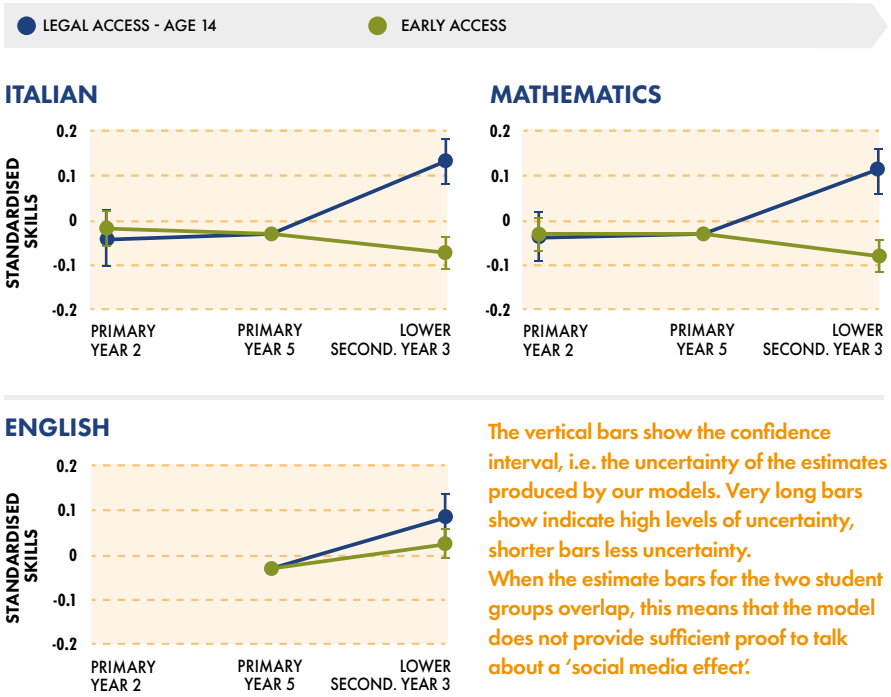
The difference between the early access and legal access groups is estimated to be approximately 0.2 standard deviations for the legal access group. In English this difference Is 0.06 standard deviations but is not significant. To give an idea of the magnitude we are talking about, in our sample the difference between boys and girls in mathematics in primary year 5 is 0.15 standard deviations higher for boys.

There is a similar difference, this time for girls, in Italian. In Italian, the difference between a first-generation non-Italian student and a student whose parents are both Italian is 0.7 standard deviations, whereas the difference between a student from a family in which both parents are graduates and a family in which neither parent has a diploma is 0.8. We are therefore talking about a considerable effect that develops over the three years of lower secondary school, a time when various international studies have shown the Italian education system to be at its more fragile.

According to the analyses we are carrying out[7], the most likely mechanism by which social networks depress skills is to be found in the level of pervasiveness that such networks manage to have in students' lives, particularly while studying and before going to bed (see page 19).

7. Gui *et al.* (2025)

Figure 3 | **EFFECT ON SUBJECTS**



The vertical bars show the confidence interval, i.e. the uncertainty of the estimates produced by our models. Very long bars show indicate high levels of uncertainty, shorter bars less uncertainty.
When the estimate bars for the two student groups overlap, this means that the model does not provide sufficient proof to talk about a 'social media effect'.

HETEROGENEITY OF EFFECT

This section explores how the effect of early access to social media changes according to students' gender, migratory origin and parents' level of education, dimensions chosen for their importance in structuring educational inequalities.
However, first let us take a look at some statistics to describe digital precocity based on these variables. The following table shows to what extent early access to social media varies by different student group.

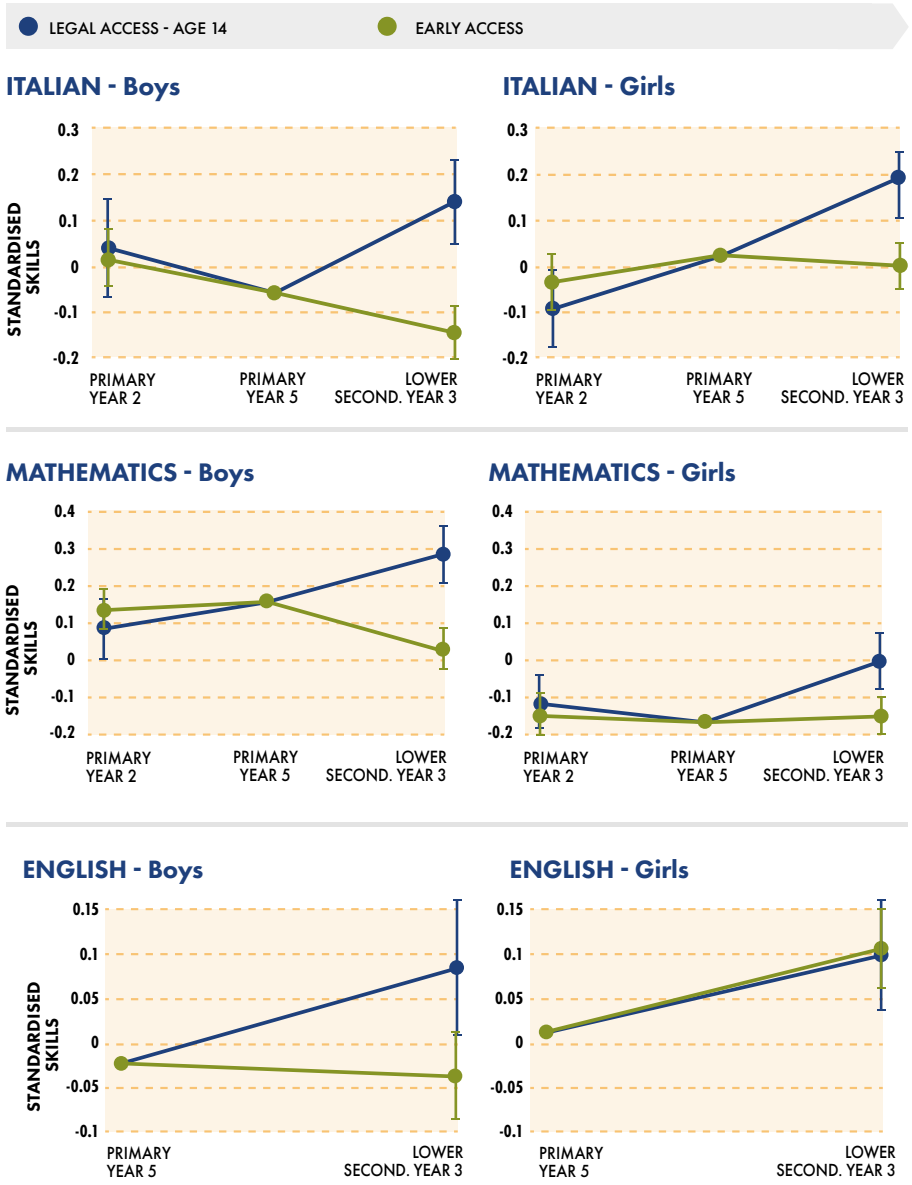
We can see that there is greater, albeit minimal, early access among girls opening their first social media profile, while the differences are more marked if we take into consideration their parents' level of education or migratory origins.

The children of parents without degrees or the children of immigrants tend to open a profile earlier, confirming the scientific literature about this trend on the part of parents with more means to be more vigilant over their children's online presence.

Table 3 | **STUDENTS' CLASS WHEN FIRST SOCIAL MEDIA PROFILE OPENED**
by gender, migratory origin and parents' level of education - percentages

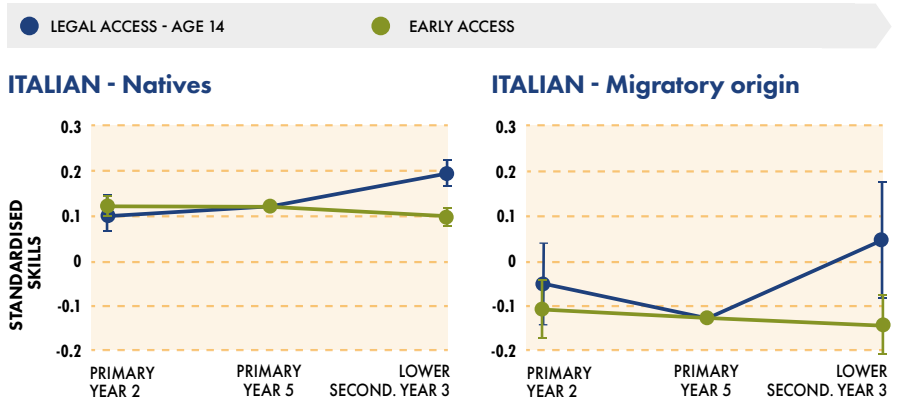
Class	Gender		Migratory origin		Parents' education	
	Boys	Girls	Migratory origin	'Natives'	No graduate	At least one graduate
Primary year 5 or earlier	9.6	12.8	16.4	10.6	12.6	9.1
Lower secondary year 1	29.9	28.8	33.0	28.8	31.0	26.4
Lower secondary year 2	25.2	25.0	22.9	25.4	26.1	23.4
Lower secondary year 3	17.8	18.0	13.4	18.6	16.8	19.9
Upper secondary year 1 or later	17.5	15.4	14.3	16.7	13.5	21.2
Total	**100**	**100**	**100**	**100**	**100**	**100**
	2,427	**2,966**	**715**	**4,678**	**3,493**	**1,941**

Figure 4 | EFFECTS ON SUBJECTS DIVIDED BY BOYS AND GIRLS



The figures on the previous page replicate the presentation of the effects shown earlier with groups paired by heterogeneity, so that the differences between them and the effect of opening a social medial profile can be seen at the same time.
Starting with gender, we observe that the negative effects on both Italian and English of opening a social media profile seem to be more concentrated in boys.
In English the negative effect is solely in boys.
These results indicate that inequalities in languages increase on the one hand (to the detriment of boys), and slightly reduce in mathematics on the other, as a result of the negative effect of early access to social media, which is in all disciplines greater in boys.

Figure 5 | EFFECTS ON ITALIAN DIVIDED BY ORIGIN



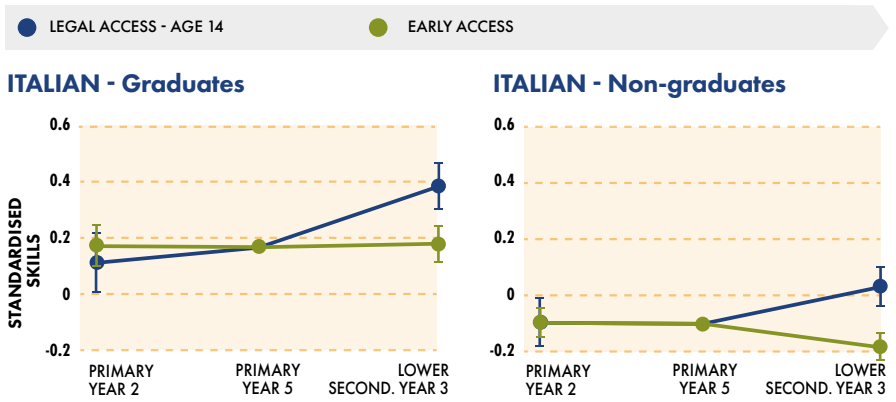
As far as migratory origin is concerned (see figure 5), the effects seem more pronounced for the children of migrant families compared with natives, although the estimate of the effects is particularly uncertain given the small number of the sample.
The effect on mathematics is very similar, while the effects on English seem in line with those of the general sample for both groups.

Given the high level of uncertainty in the estimates for the children of immigrants, it is difficult to establish whether or not the inequalities increase due to the presence of social networks. However, we should remember that early access is more widespread among the children of immigrants, and it is therefore possible that the spread of this behaviour could exacerbate existing inequalities.

Finally, we examined heterogeneity by education of students' family of origin (figure 6 shows the effect on skills in Italian, very similar to the estimates conducted on mathematics). As can be observed, the two groups start from very different levels in primary year 5.

We believe that the negative effect of opening a social media profile is similar in these two groups, but - here too - the greater level of early access among less educated families could have the effect of increasing inequalities.

Figure 6 | **EFFECTS ON ITALIAN DIVIDED BY MORE OR LESS EDUCATED FAMILIES**



IN CONCLUSION

Our research shows that early access to social networks has a negative impact on skills in Italian and mathematics. Students who open a profile as early as lower secondary year 1 achieve worse results at the end of this stage of their education than those who wait until they are 14, the age set by law.
The phenomenon of early access is more common among children of migrants and less educated families, and this suggests that it exacerbates inequalities.
The negative effect of early access cuts across migratory and social origins.
The exception is student gender: boys appear to suffer the consequences of early use more than girls, who are less affected.

What the teachers say

**"I have not seen changes in linguistic skills (writing and language), but I have in the comprehension of written texts. Smartphone use affects the ability to concentrate for long periods and working memory.
Schools should prevent their use at school and work to make students mindful users.**

Italian teacher

"For us teachers a smartphone should be an ally, but often it is the enemy of concentration. A balance needs to be found between responsible and irresponsible use. It could be an excellent tool, I often use mine for teaching. It helps with learning English, with content in original language to use during leisure time, but children are not always aware of that. In general, however, smartphones are used too much and not mindfully and I do not see any particular benefits in their use.

English teacher

**"In recent years I have seen greater difficulty reading and understanding written text.
On the other hand, digital devices have brought certain topics closer to young people. I am in favour of using smartphones for teaching, responsible use needs to be promoted, they shouldn't be banned.**

Human sciences teacher

DIGITAL PRECOCITY AND EDUCATIONAL POVERTY

Sofia Ercolanoni, Francesca Milzani and Cristiana Paladini

Despite the fact that various authors recognise the need to consider the educational component an integral part of the multi-dimensional poverty construct, there is no clear agreement in the literature about the definition of 'educational poverty'[1].

Some definitions focus specifically on competences, describing the condition of educational poverty as inadequate levels of basic skills such as reading, comprehension, writing or the ability to do basic operations in mathematics[2]. Other authors also consider a level of education below upper secondary school an additional essential element in the definition of the concept[3]. However, this area of the literature converges on defining educational poverty principally as educational deprivation, pursuing a one-dimensional approach[4].

Instead, the **EYES UP** research has adopted a multi-dimensional approach, which comes closer to the meaning of 'education' in Italian, i.e. 'the act of educating, i.e. **helping the development of a person's abilities and attitudes,** refining their **sensitivity**, correcting their behaviour and transmitting cultural, aesthetic and moral elements to them' or a 'process comprising a series of actions and learnings aimed at enabling the individual **to find their place in society**'[5]. This integrates the context in which the person lives into the definition, embracing the broader definition of 'educational community'.

Save the Children and the Italian Institute of Statistics (ISTAT), for example, adopt a more generic definition of educational poverty as the deprivation of opportunities to learn, experience and develop abilities, talents and aspirations, fundamental for laying the foundations for a successful adult life in a complex society[6].

1. Giancola and Salmieri (2023).
2. Barbieri and Cipollone (2007).
3. Allmendinger and Leibfried (2003).
4. Pratesi (2024).
5. Treccani (2018); Pagnoncelli (2005).
6. Pratesi (2022); Giancola and Salmieri (2023).

According to this definition, educational poverty is not limited to the analysis of purely cognitive skills, but includes dimensions inherent to the context in which the individual lives and grows up, the opportunities it offers and non-cognitive abilities. There are various types of these more extensive educational poverty indexes (IPE). In 2014, Save the Children introduced an experimental index in Italy comprising 14 indicators measuring educational opportunities both inside and outside of schools[7]. The index investigates the accessibility and quality of education offered, as well as children's levels of participation in recreational and cultural activities. ISTAT subsequently produced its own educational poverty index, which is constantly updated and of which there are multiple versions. The IPE versions tend to divide educational poverty into four areas: participation, resilience, living standards and friends and competences.

Given the number of similar indexes available, in the **EYES UP** research it was decided not to select a specific tool for measuring educational poverty. As the relationship between digital precocity and the cognitive component has been amply demonstrated in the earlier parts of the report, here we examine a series of elements relating to two central dimensions of the non-cognitive part of the concept of educational poverty: the use of free time and self-efficacy.

7. Save the Children Italia (2014).

SELF-EFFICACY AND FREE TIME

Before investigating whether there is a link between indicators associated with the multidimensional concept of educational poverty and the use of digital devices, we analysed how the use of free time and self-efficacy are associated with each other. Specifically, **the theoretical constructs of self-efficacy refer to the academic, social and emotional dimensions.**

Academic self-efficacy is positively associated with cultural and recreational leisure activities, such as reading, going to museums and/or theatres and spending time on a hobby. The self-efficacy dimensions linked to the social and emotional spheres - which have been found to be moderately correlated - appear on the other hand to be positively associated with practising a sport and doing physical activity, as well as satisfaction with one's physical appearance. In addition, higher levels of social self-efficacy are associated with spending more time with friends, both at home and outside the home, as well being positively associated with the time spent on personal care. There is in fact a positive correlation between feeling socially effective and satisfaction with one's social life.

On the other hand, the emotional self-efficacy dimension is more strongly associated with the family environment, both in terms of more free time spent with family and as regards feeling generally satisfied in one's family life.

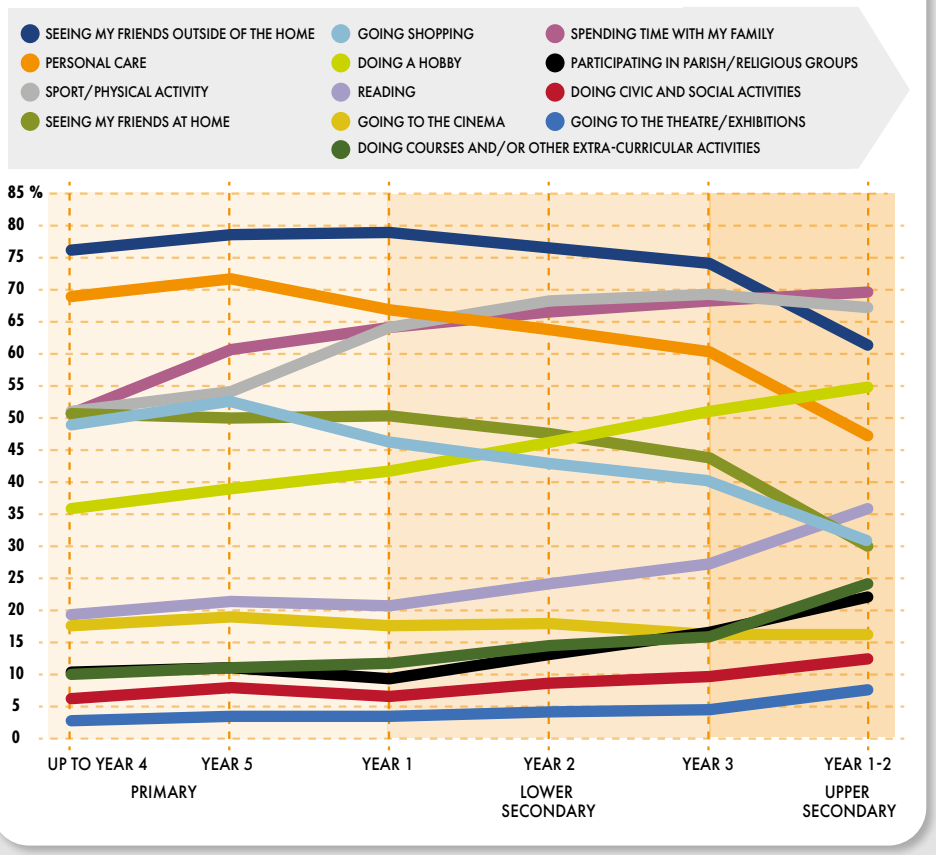
While emotional and social self-efficacy are positively correlated with satisfaction with one's personal appearance, only social self-efficacy significantly correlates with taking care of one's body in one's free time.

EDUCATIONAL POVERTY AND PRECOCITY/ PERVASIVENESS

Now we come to the relationship between educational poverty (measured using free time and self-efficacy) and the concepts of digital precocity and pervasiveness.

The analysis is illustrated with line graphs. The X-axis shows various 'levels' of precocity and pervasiveness. In the first case classes of access to smartphones or social media account are shown progressively, from left to right **(decreasing precocity)**, while in the second case classes of pervasiveness scores are shown progressively, from left to right **(increasing pervasiveness).**
Each line in the graph is associated with a given leisure activity. The Y-axis shows the percentage of the sample that says they often or always do the activity in question. The graphs help to show how the percentage of young people who often or always do a certain activity in their leisure time changes as the levels of pervasiveness or precocity vary.

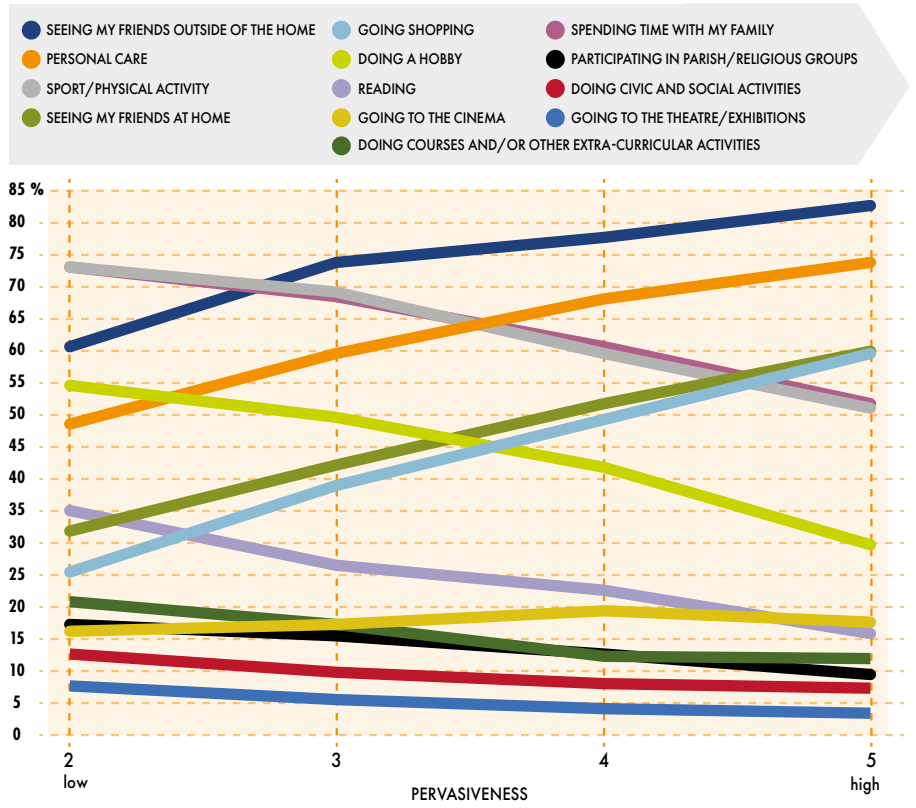
SOCIAL MEDIA PRECOCITY AND LEISURE ACTIVITIES



With respect to opening a first social media account, it can be observed that as precocity decreases (when it is opened in a later year), the percentage of boys and girls who say they often or always carry out activities such as taking care of their appearance and shopping, but also spending time with friends both at home and outside of the home, also decreases. On the other hand, it can be observed that as precocity diminishes, the percentage of children that dedicate a good part of their free time to recreational and cultural activities such as reading, hobbies (gardening, cooking, painting, etc.), taking courses and/or other extra-curricular activities (theatre, playing a musical instrument, etc.), or participating in parish/religious groups, increases.

These trends also extend, albeit less markedly, to the year of access to a first smartphone (no graph provided). In fact, there seems to be a positive association between the acquisition of a smartphone at an early age and often or always doing certain leisure activities. These include personal care (spending time on make-up, manicures, at the beauticians, hairdresser/barber, etc.), shopping and spending time with friends at home or outside of the home. There does not seem to be a particular relationship between an earlier year of access to a smartphone and doing sport or spending time with one's family. Finally, there is also a negative association between early access to a smartphone and spending time on recreational/cultural activities such as reading or hobbies, and participating in parish/religious groups.

PERVASIVENESS AND LEISURE ACTIVITIES



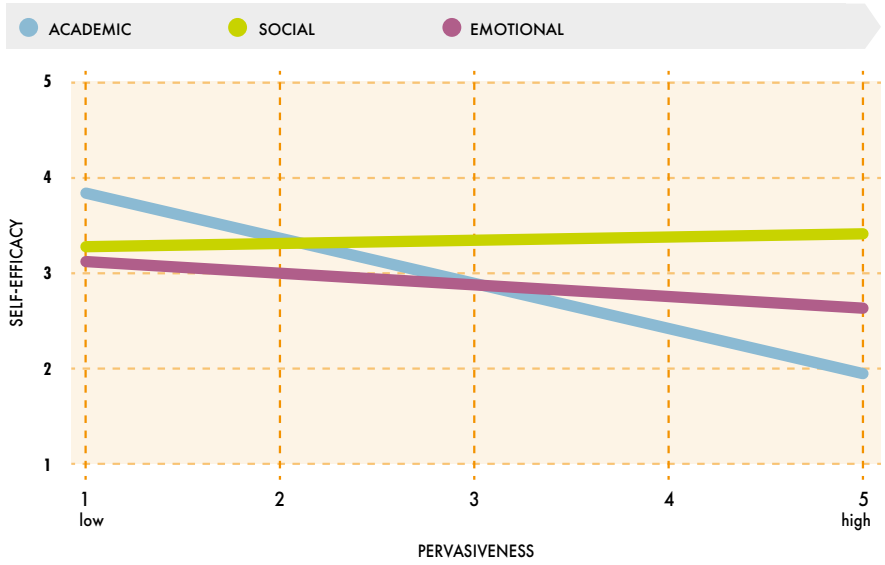
As far as the pervasiveness scale is concerned, we can observe similar associations as those shown for the early acquisition of a smartphone and activation of a first social media account.
In fact, as pervasiveness increases, so does the percentage of young people who often or always see their friends outside of the home or at home or that spend time on personal care or shopping in their free time.
Conversely, an increase in pervasiveness is negatively associated with recreational or cultural activities, in particular with reading and hobbies, as well as with spending time with family and doing physical activity/sport.

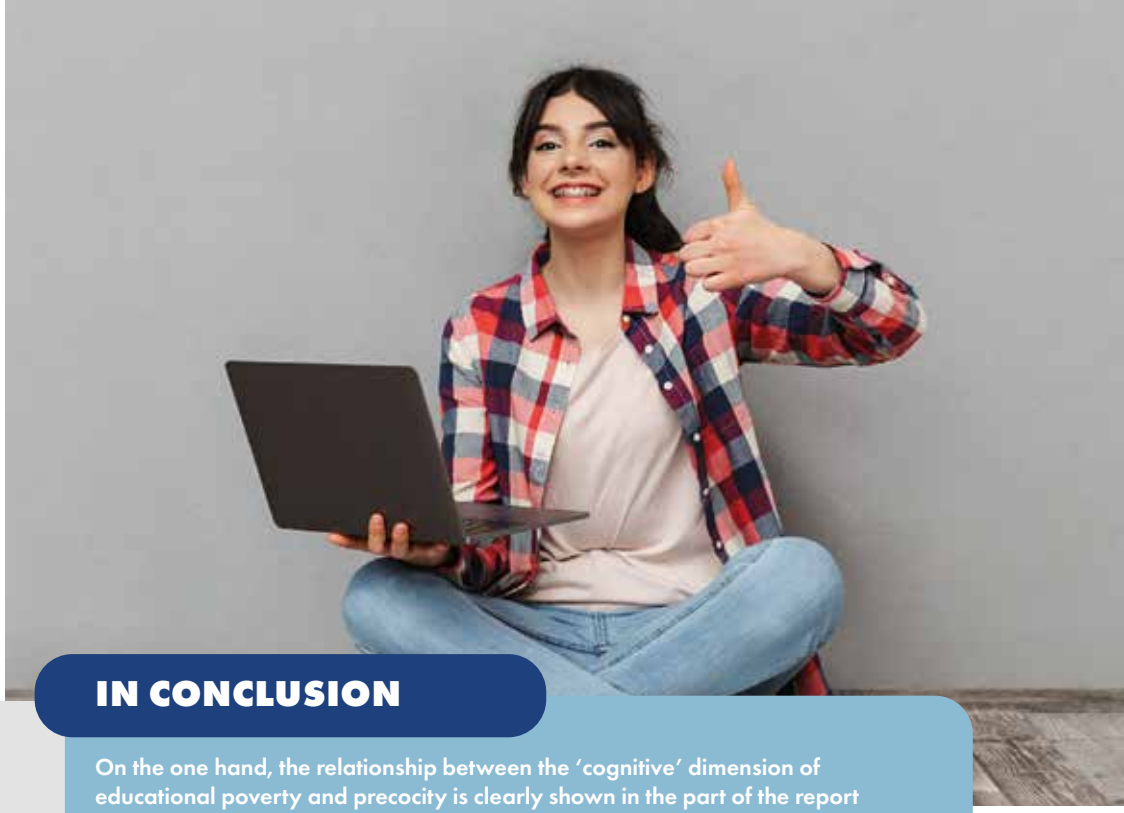
PERVASIVENESS AND SELF-EFFICACY

The relationship between pervasiveness and the various dimensions of self-efficacy show the same trend as previously reported for schooling.
There is in fact a negative association between the two, so that **as pervasiveness increases, academic self-efficacy decreases.**
No strong associations were observed between pervasiveness and social and emotional self-efficacy.
The same can be said with respect to the year in which a student opens their first social media account (no graph provided). Later social media account opening is associated with greater academic self-efficacy.

Can family background impact on levels of pervasiveness and early access to social media? As seen previously, **the higher parents' academic qualifications are, the later the opening of a first social media account tends to take place. A similar association can be observed with respect to pervasiveness.**
For example, on average, children whose parents are both graduates present less pervasiveness than children of parents who did not attain a diploma.
In the latter group, 8% have scores of 4 or more, while this percentage halves in the group of children whose parents are graduates (4%).

RELATIONSHIP BETWEEN PERCEPTION OF SELF-EFFICACY AND PERVASIVENESS





IN CONCLUSION

On the one hand, the relationship between the 'cognitive' dimension of educational poverty and precocity is clearly shown in the part of the report dedicated to academic performance. It confirms a negative association between precocity/pervasiveness and the extent to which male and female students consider themselves academically capable.
In addition, family background in terms of parents' academic qualifications also appears to be associated with pervasiveness and, as seen earlier, precocity. The more educated the parents, the later the access to social media and pervasive smartphone use.
In this chapter a clear negative association between precocity/pervasiveness and the use of leisure time in cultural and group activities and voluntary work has emerged, while there is a positive relationship with activities like spending time with friends, shopping and personal care. This phenomenon could be interpreted as both a positive signal and as an indication that social life is increasingly mediated by digital environments, which tend to orient it towards forms of consumption.
All of this suggests that digital precocity and pervasiveness are associated variables and can in part predict educational poverty. The **EYES UP** research is therefore handing over to future research the task of finding out how to integrate these aspects into the scales that measure this complex concept.

FIELD WORK

The protagonists' voices.

Cristiana Paladini
and Vanessa Trapani

One of the most innovative aspects of the project was the collaboration between the institutions responsible for carrying out the research, the two Universities of Milano-Bicocca and Brescia, and two third-sector organisations whose mission means they are in constant contact with local areas. A key part of the work was in fact the willingness and involvement of players who are ultimately among the recipients – head teachers, teachers, educational and extra-curricular teaching personnel – and the protagonists of the research – the young people. One of the goals of the project was indeed to provide a foundation of solid scientific evidence to facilitate the adoption of actions and educational policies in a context – digital education – in which opinions and approaches are varied and rarely aligned.

To ensure broad representation of these players, first of all the organisational networks working on educational processes inside and outside of schools in the areas involved (schools, local entities and other third-sector organisations) were activated. The initial work of involving them aimed to ensure that as many people as possible would take part in the survey and that they understood more about its purpose and the tool used. In the second half of the project, the partial and final results of the research, as well as potential or existing action strategies, were discussed with the players involved.

Four formal meetings with the educational community were held, one in the province of Brescia, two in the province of Cremona and one in the Province of Monza & Brianza.

It was decided to combine an initial presentation of the data with an opportunity for discussion and dialogue, in order to understand the viewpoints of the people who, in different roles, work with young people. Other meetings were been scheduled for the following months.
There were then informal meetings with young people, teachers and parents at one of the schools involved in the research, the IIS Ezio Vanoni at Vimercate (MB). Starting with a presentation of some of the data, these included discussions of the findings, comments and dialogue among the young people, and above all between them and the adults, researchers and teachers[1].
Key points emerged from these various meetings, which provide starting points for the research on the one hand and the educational community on the other.

1 DIGITAL TECHNOLOGY IN SCHOOLS COMES BEFORE DIGITAL EDUCATION

One of the key topics to emerge is the fact that digital media has arrived in schools without students, teachers and families being adequately trained in its use. Several sources showed that there was an imbalance between the desire to integrate technology into teaching and the difficulties in managing its negative effects, especially on concentration and attention, but also in the impact that digital pervasiveness has on children's overall wellbeing.
Teachers recognise that there needs to be a coordinated effort *'to make students mindful users'*.
Young people's views confirm this picture. Their responses to the question *'How often at school have teachers or experts...'* show – as can be seen in the graph – a clear shift in digital education towards the management of online 'dangers', the management of social media profiles and the reliability of sources. Little or hardly any space is instead dedicated to the creative use of online tools, time management or the use of digital tools for managing/planning activities and, ultimately, to 'digital wellbeing'.

1. This information was used as inspiration for 'Generation Smartphone', a short video documentary made with the students. The video is made directly from the young people's point of view. They developed the concept and helped make the video, both in front of and behind the camera. Their experiences are sandwiched between those of a selection of teachers, to give an authentic picture of the challenges and opportunities offered by digital media.
The documentary [in Italian] is available from the official website of the EYES UP research:
https://www.benesseredigitale.eu/i-progetti/eyes-up/

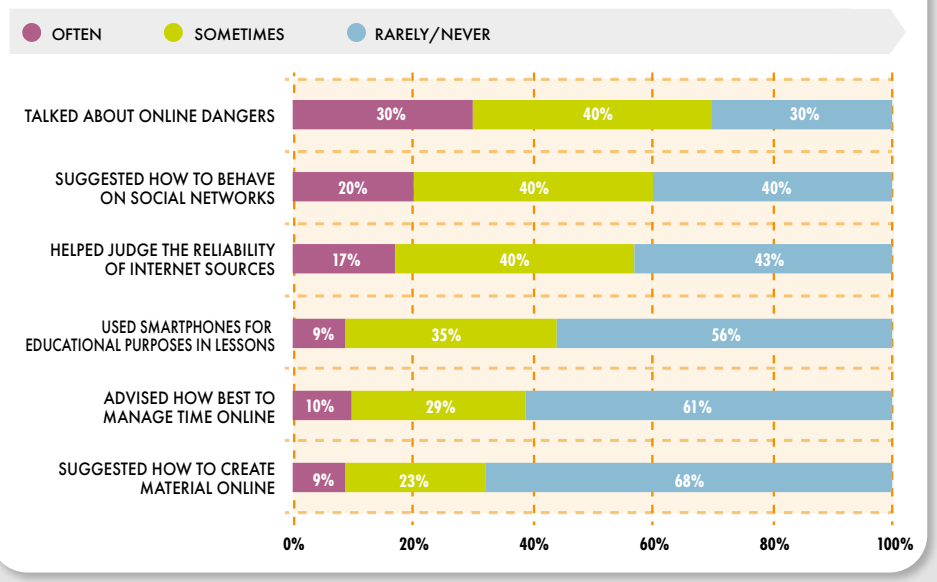
The importance of expanding the scope of digital education to encompass these areas is something that always seems to be suggested by the young people themselves.
The questionnaire they were given included an open question at the end **('This space is dedicated to your comments and/or observations'),** which they were free to answer or not. More than 1400 students (20% of respondents) chose to do so, which made it possible to include some qualitative content in the overall analysis. The majority of students who decided to answer were positive about the questionnaire or specifically said thanks for the opportunity the questions gave them to express their thoughts.

"Thanks, I am pleased someone is interested in what we think"

"First I wanted to say thanks for having had this chance to be able to voice my opinion about topics that are not normally talked about very much.
In fact, especially at school, we young people have very little space to express our opinions, and when we do we are hardly ever listened to"

"I'd like to say thanks for this opportunity, I think it is a good idea to look into the lives of young people outside of school, because we live in a constantly and rapidly changing world, and often it is not easy to keep up with everything, it can cause problems"

THE ROLE OF SCHOOL
HOW OFTEN AT SCHOOL HAVE TEACHERS OR EXPERTS... (%)



A sizeable group of responses show that the questionnaire provided ideas to think about or for personal exploration:

"I think that this kind of work can help us get to know ourselves better because they are not the kind of questions we ask ourselves"

"The questionnaire made me think about my life and about certain things I hadn't thought of for a while (for example my family and studying)"

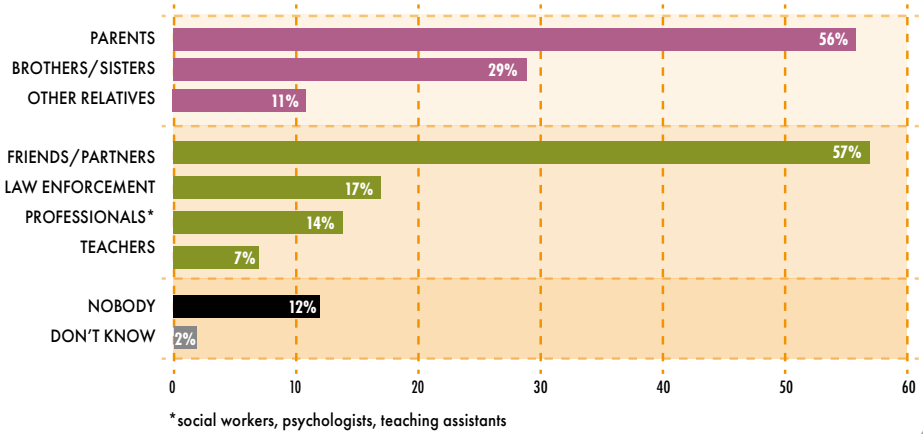
"My mother often used to tell me off, saying that technology is a disease and you shouldn't overuse it but I didn't really listen. This questionnaire showed me that technology can cause addiction and that it is hard to break the habit"

Some of the young people made suggestions for the future that show that digital education needs to be expanded to include topics such as managing time online, wellbeing and digital relationships and, now inextricably connected to these, young people's overall wellbeing.

"During the school day I think it would be useful to encourage kids to use their phones less, do more civic education courses and more group work. For personal wellbeing it would be useful to have a limit for apps and phone use"

In general, despite often being pervaded by digital media themselves, schools do not seem to have managed to acquire an authoritative role in this area.
To the question ***'If you had negative experiences online, would you talk to...?'*** teachers are among the last potential interlocutors, with 7% of preferences. This area remains the prerogative of family and friends, who are not necessarily able to provide boys or girls with the support and guidance they need.

IF YOU HAD NEGATIVE EXPERIENCES ONLINE WOULD YOU TALK TO...? (more than one answer is possible)



*social workers, psychologists, teaching assistants

2 THE NEED TO SEPARATE EDUCATIONAL USE FROM PERSONAL USE

At the meetings and interviews, teachers emphasised the need to separate the use of technology for educational purposes from recreational and social use.
Some suggested using devices dedicated exclusively to education in order to avoid distractions.

They also pointed out the difference between computers and tablets, which are useful for creating content, and smartphones, which tend to encourage passive, distracting use.

The main thing to emerge from the meetings was a certain confusion among teachers as the use that children make of technology and the effective impact on their wellbeing. The adults are aware that there are different usage types and habits ***('a girl might use social media in her break to post photos on Instagram, a boy might go off and play a game or two of an online video game, and a group of three or four boys might play online video games together')***, which may or may not be a cause for concern and represent different

levels of risk, but it is difficult to identify the issues.

This is the reason the decision was made to divide respondents into clusters according to their digital media usage, offline activities and pervasiveness score. The aim was to make the different usage profiles easier to interpret, by trying to identify various 'ways' of digital living, which often differ considerably from one other.

A statistical method was used (as described in the dedicated section on pages 20-23), but talking to the children was crucial when it came to interpreting the characteristics of each cluster, expanding the observation point and 'judgement'.

The clusters were in fact discussed with about ten young people who were part of the research and took part in a workshop, which produced some interesting results. A cluster that the research team had initially interpreted as being almost 'problematic' due to pervasiveness, the use of free time (shopping and personal care) and mainly passive use of online content, was then renamed as a result of discussing it with the children themselves.
The cluster was named the **'consumers'** cluster, with the emphasis on the 'normality' or at least the 'ordinary' nature of certain habits. In the first cluster, relationships with peers and family also played an important part of leisure time – and the children interviewed confirmed this.

Clustering also produced a smaller but not unimportant group (22%), which had initially been named the 'good children' (almost the opposite of the previous group). In the research these were the **'committed'** girls and boys who used digital media with moderation and alongside social, cultural and creative activities. Knowing who our children are and talking to them about the way they use digital media in their free time seems to be a pre-requisite for adopting effective educational strategies. It is a need expressed by teachers, but above all comes from the young people themselves.

> **"I think it would be useful to give teachers the average responses of the children at their schools so they can become aware of the situation"**

3 THE ROLE OF THE EDUCATION 'SUPPLY CHAIN': PRIMARY SCHOOLS, SECONDARY SCHOOLS AND FAMILIES

One need that has emerged from the fieldwork is for a link between educational agencies, starting with the various schools, but without forgetting the role of families, which are still solely responsible for choosing times and means of digital access. Also in light of the results of the research, teachers have emphasised the need to pay attention to the use of digital media well before children come to secondary school, by which time 'it is too late'.

Consequently the urgency of proposing systemic work and a joint educational vision emerges. This should involve children's and teenagers' services, school and families, to avoid projects that are too short and too fragmented, and risk becoming less effective in the long-term. Teachers often complain that, in the absence of clear guidelines, they have to fall back on their 'personal relationship with students to understand how to manage the use of digital media at school'.
In this context and in the presence of a vast number of different educational approaches, not just between families, but between schools, the results of the research have been welcomed as a solid starting point from which awareness and shared strategies can be developed. Reference has been made to the central role of parents as key actors in regulating the use of technology by their children, but at the same time it appears evident that families are the first to find themselves unprepared and without clear points of reference, overwhelmed by social pressure.
In the open questions and in informal discussions with the interviewers and the researchers, many young people clearly expressed the opinion that allowing children early access to digital media is wrong. Some said that when they become parents they will be more careful.

> **"I think smartphones should be given to children after the age of 11, and they should be clearly taught how to use them and what the dangers are. I don't think there is enough discussion at school about cyber-bullying and things like that, and when there is, it needs to be done well because it is important"**

To avoid digital education being left to the good intentions of parents alone or to the initiative of a few teachers, at several meetings people emphasised the importance of creating close-knit groups, capable of agreeing to a set of rules. Reference was often made to 'Patti Digitali' (Digital Pacts), a grass-roots experience developed by groups of parents who wanted to agree to the age at which they gave their pre-teen children a smartphone or allowed them access to social media, in order to reduce the social pressure to give them early access and to create a space for families to talk to each other. The Community Digital Pacts network now includes not only families, but also educators and local organisations throughout Italy, and is a practical model, also for schools, for how to build an educational environment consistent with the principles of the 'Community Digital Education Manifesto'[2], which was recently used to create a handbook for schools[3]. The points indicated in the handbook can serve as inspiration for practices in schools, as well as commitments undertake by schools together with families in order to foster a healthy, gradual and creative use of technology, especially up to lower secondary age.
Although not all teachers and educators agree on schools having an excessively interventional or even 'censorious' role when it comes to the use of personal digital devices in class, the schools that have attempted practical experiments (handing over phones when entering the classroom, trips or offline and smartphone-free moments) say they have been generally satisfactory and popular with the students.

2. https://pattidigitali.it/#manifesto
3. https://pattidigitali.it/scuole/

IN THE FINAL ANALYSIS

The needs that have emerged from the educational community can be summed up in a few key words:

- **KNOW. Disseminating scientific evidence about the relationship between children and digital media and, more generally, the wellbeing of the younger generations, is a crucial starting point for tackling the challenges of constantly changing scenarios.**
- **SHARE. Sharing good practice is an essential tool for constructing joint strategies with the various players involved in education and above all with young people themselves.**
- **INFORM AND INVOLVE. Schools have expressed the need for families to be involved from primary school onwards. There are frequent local projects and initiatives being organised, but the more vulnerable families tend not to be involved in discussions about children's wellbeing. Therefore for projects to be effective it is fundamental to be able to plan resources (with a view to ensuring project continuity) and to set up local networks in order to provide community digital education.**
- **VALUE. In the sense of 'giving value' to the work carried out. While over the years more and more projects and funds have been dedicated in various forms to combating the problems experienced by young people on the one hand and digitalisation in schools on the other, shifting the focus onto evaluating the efficacy and relevance of such work is crucial in order to be able to orient future planning.**

CONCLUSIONS

SUMMARY OF THE RESULTS

Marco Gui

The **EYES UP** research carried out an in-depth analysis of the link between early digitalisation, academic performance and education inequalities. The integration of longitudinal data provided by INVALSI and use of rigorous statistical procedures means it was possible to estimate the impact of the age at which children open their first social media account on their academic performance, which is a first in this scientific area.

The most frequent online activities in the research sample were listening to music and watching short videos (TikTok, Instagram reels and YouTube shorts), followed by TV series, films or TV programmes (streamed on platforms such as Netflix, Amazon Prime or Disney+) and longer videos (e.g. YouTube videos and livestreams on Twitch). However, a significant percentage also use the internet to find out information about things they are interested in and for the news.

Despite the provisions of the General Data Protection Regulation (GDPR), which sets the minimum age for having a social media profile at 14, the majority of adolescents opened an account as children: 65.8% of the sample had a profile at the end of lower secondary year 2. Smartphones are the main tool used to access social media, and on average students receive one at the end of primary school. This confirms a trend of early access to devices and online environments about which there was already empirical and plenty of anecdotal evidence[1].

It is interesting to note that access is later for children from more educated families and Italian natives compared with those with a migratory background. Only 45% of parents seem to have used any form of parental control, showing that unrestricted, unfiltered internet use during pre-adolescence has been the experience of the majority of students.

As regards free time spent offline, the main activities are going out with friends and activities with the family, personal care and shopping, going to the cinema and doing sport. However, a significant niche also reports spending time on hobbies and reading.
It was then investigated whether in the sample online activity translates into smartphone use that pervades the most important social and physiological times of the day. This measurement is an important indicator of the pervasiveness of permanent connection[2].
The data collected show that smartphones particularly invade sleeping time, both in the morning when students wake up (more than half of respondent use their smartphone 'often' or 'always' at that time) and, to a lesser extent, when they wake up at night (22%).

Pervasiveness is also unequally distributed, with levels lower among children from a more socio-culturally privileged background.
Three profiles emerged from the combined analysis (cluster analysis) of free time activities and smartphone pervasiveness:

1. **THE CONSUMERS (38% of the sample)** carry out recreational activities online that presuppose a passive use of digital media and their smartphone, or an active use requiring little time and effort. They also, but to a lesser extent, create online content that presupposes a more active use and more digital skills. Relationships play an important part of their free time, including spending time with friends and family, as well as on personal care and shopping. Finally, there is a high level of pervasiveness in the use of digital devices, more than for the other clusters.
This profile mainly includes girls (73%).

2. **THE GAMERS (40% of the sample)** spend less time than average on all the online and offline activities proposed, with the exception of sport and, above all, video games. Despite this, the pervasiveness of their smartphone use is below the sample average.
This cluster is mainly made up of boys (69%).

3. **THE COMMITTED (22% of the sample)** use digital media for recreation, but also create content, search for information and read news on newspaper websites and blogs.
As well as spending their free time with friends and family, doing sport or dedicating themselves to personal care, they also spend far more time than the sample average on cultural and recreational activities (reading, cinema, hobbies, etc.), social activities and voluntary work.
This cluster is predominantly made up of girls (62%).

These three profiles were 'recognised' by male and female students at the feedback meetings held with them, confirming that they are good ideal types of their own or their peers' lifestyles.

1. Mascheroni and Olafsson (2018); Gerosa *et al.* (2024)

2. Gerosa *et al.* (2022)

We looked at two indicators to answer the question, **'How are our young people doing?'** - subjective wellbeing and self-efficacy. As far as the first indicator is concerned, 75% of young people achieve scores of 3 or more on a scale of 1 to 5, with a sample average of 3.4. In terms of gender, there is a significant difference between boys and girls. Whereas the average score for boys is 3.6, girls record an average of 3.3 (results which are in line with the literature on the subject). Self-efficacy in three dimensions (academic, social and emotional) was measured. The emotional dimension was the one in which the total score was the lowest (2.88) with significant differences between the genders. The average for boys was 3.13, and the average for girls 2.67.

If we observe the subjective wellbeing and self-efficacy scores of the various clusters, the **committed** cluster (who use media creatively and show commitment in their activities during offline time) are the profile with the highest level of satisfaction and self-efficacy, while the other two clusters present specific weaknesses. These are the **consumers** (who use the internet more passively) in their academic self-efficacy and the **gamers** (focused on online gaming) in their social self-efficacy and subjective wellbeing.

Going back to the research questions that were identified at the start of the project, we will try to give a short answer to each of them. The first research question **investigated the impact of the age at which children and adolescents start using digital devices and environments on their learning outcomes**.
The research confirmed that there is a negative association between early access to smartphones and social media and academic performance, whereas there do not appear to be significant associations for computers, tablets, video game consoles and instant messaging. However, the research has taken a step beyond the identification of simple correlations, which have hitherto dominated this area of research. By carrying out a longitudinal analysis using the difference in differences technique, the research used INVALSI longitudinal data to make a rigorous analysis of the impact of the early opening of a social media account on learning levels over a student's school career (the data on the impact of the smartphone or other devices were less suited to this in-depth analysis, given their distribution).

Using sophisticated statistical matching, in which a group of students that opened a social media profile at the end of their lower secondary school was compared with a group that opened one after their lower secondary exams, it was possible to analyse academic performance over time with and without the 'social media factor'. The results show a significant gap in performance between the two groups, to the detriment of the 'early users', who show significantly lower levels of performance from lower secondary year. This is the first analysis in Italy to rigorously identify this impact. The result confirms many suspicions that have accumulated over the years, in both empirical research and anecdotally and in the perceptions of various professional categories in the fields of education and healthcare, as to the possible negative interference between digital precocity and learning. It also suggests the need for a critical approach to the proliferation of technology among children, placing particular attention on the educational and family environments in which this early digitalisation takes place,

almost always subject to commercial and social pressures and with the contribution of a tendency of parents to want to monitor their children[3]. What is behind this result? Is it simply a distraction effect, that takes time and attention away from studying, or is it due to the impact of content that is age-inappropriate and problematic forms of consumption? Some of the analyses presented in the report lead to the conclusion that distraction is the predominant effect of social media. However, these are just suggestions, less rigorous than the previous analysis, and lay the foundations for research into the precise cause of this deficit going forward.

The second research question concerned **the relationship between early exposure to digital media and disparity in gender, social origins and migratory background**. As far as gender is concerned, the results of our research indicate that boys appear to suffer more from the consequences of early access to social media on their results at school, measured using the INVALSI tests, than girls, who are less affected.

More in general, the research confirms that the practice of allowing young people early access to digital media is more widespread in social contexts that are more disadvantaged from a social and cultural point of view. Children from such backgrounds

3. Vitullo *et al.* (2022)

also tend to use digital devices more intensively, often without sufficient educational support from their families.

Although the negative effect of digital precocity is not greater among these categories, the fact that it is more widespread in more vulnerable categories risks increasing existing gaps in educational performance. This has been confirmed also by the **analyses of 'educational poverty' (the third question of the research).**

Leaving aside the problematic relationships with the cognitive and purely scholastic dimension of educational poverty that we have already seen, the analyses showed that the early and pervasive use of smartphones and social media are also associated with less variety in cultural consumption and lower perception of academic self-efficacy. This leads us to conclude that the relationship between educational poverty and the use of digital media by children is complex. On the one hand, lack of access and limited possibilities of developing digital skills are factors that count towards identifying an educationally deprived context. However, on the other, it is increasingly clear that excessive use of digital media, and especially the lack of supervision or guidance in the home, are factors associated with educational poverty.

We leave it to future research to establish whether this association also conceals a direct causal impact, which our analyses suggest exists.

The evidence of the **EYES UP** research suggests the urgent need for targeted educational policies to promote the mindful and regulated use of technology by children. Structural interventions involving schools, families and institutions could help reduce the negative effects of early digitalisation and ensure more evenly balanced access to educational resources. The **EYES UP** study looked in depth into what kind of interventions were needed to orientate educational practices and policies in digital education. The following box contains a list of what emerged from discussion of the results by groups of students, teachers, head teachers and the research team.

SUGGESTIONS FOR PRACTICES AND POLICIES

The entire experience of the **EYES UP** project, together with its quantitative and qualitative results, has identified possible areas for action and recommendations. These can be grouped into three main concepts: **protection, education** and **context.** These three dimensions need to be dealt with systemically in order to truly be able to provide our girls and boys with the best conditions for digital wellbeing.

BUILDING GRADUAL, SHARED ACCESS (PROTECTION)

- **Parents must talk to one another on a local level and get together** to collectively manage choices about when to introduce and rules for managing personal digital devices, and promote conversations about digital education in the various age groups (see the Digital Pacts experience www.pattidigitali.it)
- **Schools need to 'take a position' with respect to the timing for gradually introducing access to unrestricted browsing**, including by providing guidance and recommendations to families, who are often confused. The school's position must be indicated in the Joint Responsibility Pact and the issue must be discussed at school and year meetings (not just in formal documents often only read by a minority of parents).
- **All institutions,** as well as sports, religious and cultural associations, **must be committed to complying with the age 14 legal limit** for access to platforms requiring consent to data processing, above all social media (GDPR).
- **Parents need to be informed as a matter of urgency about the dangers of digital precocity,** the educational and technical solutions (parental control) to deal with them and the use of digital tools that are instead important and appropriate for the various age groups.
- **Boys and girls** could and should be **involved in the construction of rules for using digital media at school,** during lessons and in breaks, which can then be added to the school's e-policy (e.g. how to behave during breaks or on school trips). Discussions with schools have shown that students are not hostile to the idea of restrictions on the use of smartphones at school.
- Adults **must commit to changing their own pervasive digital usage habits,** and be aware that children are very conscious of the dysfunctional nature of certain habits and the inconsistency of certain adult behaviours (smartphones in bed, work time invading family time, lack of moments where their attention is fully on their relationships etc.).

TO PROMOTE AN INTEGRATED DIGITAL EDUCATION STRATEGY (EDUCATION)

- **Identify the right digital education content for each stage of development, so that gradual, progressive access** to unrestricted browsing takes place in tandem with the development of skills.
- As some respondents have requested, **supplement 'traditional' courses** on cyberbullying and fake news **with the emerging topics of digital wellbeing** such as use of time and attention, distortions of sexuality in social media and business models on digital platforms.
- **Give vertical continuity** to the work on digital wellbeing at the various school levels, starting with preparatory activities – not necessarily using digital tools – at primary school (e.g. learning to plan time).
- **Ensure adequate** digital wellbeing **training for teachers** so they can make the most of digital tools to enhance learning in an interactive, productive way and help train balanced and 'mindful users'.
- **Try out teaching methods that make the most of digital media in school,** while taking on board its side effects. This could include reverse mentorship projects giving young people the opportunity to share their knowledge of digital media with their peers and with teachers.
- **Constantly monitor the effects of digital integration in education.** Introduce assessment tools in schools to understand the impact of technology on school performance and student wellbeing, and to decide whether and in which contexts technology truly adds value (e.g. on the emerging topic of generative AI). In this area, collaboration between the world of research, third sector and schools can be an effective strategy, as already partially tested as part of the EYES UP project.
- **Integrate the relational dimension into teaching activities.** Foster opportunities for open discussion about students' digital experience in order to get a better idea of their usage dynamics, recognise their skills, highlight the risks of certain behaviours and, ultimately, strengthen offline relationships and listening in class. Involve students in the self-assessment of their use of digital devices.
- **Strengthen offline socialisation.** Finally, as the research and discussions with schools confirm, for some families with social or material difficulties, digital media is often the only possible 'place' their children can spend their spare time. Offline time and experiences (such as trips, shows and study groups) are therefore special moments that schools should preserve and encourage as an integral part of their mission of education and social integration.

ADAPTING PRACTICES (CONTEXT)

- **Adapt school practices** to the gradual introduction of unrestricted browsing, for example by setting rules for online homework so that children being permanently connected is not a given; by making sensible, non-invasive use of the electronic register, and where possible, by maintaining other forms of communication between school, students and families.
- **Draft a set of internal regulations on the use of technology**. Make a clear distinction between school use and personal use, possibly supplying dedicated devices or being courageous enough to test ways to limit use and protected experiences.
- **Ask manufacturers to produce technology** that fosters digital wellbeing, such as reliable age verification mechanisms, safe, filtered environments for digital learning at home, smartphones suitable for pre-teens, settings for electronic registers that enable marks and notices to be published at times compatible with families' right to disconnect.
- **Ask** national and European politicians to provide adequate **regulation** (see the draft laws currently being examined between the Italian lower and upper chambers).
- **Involve students in regulating the internet.** Good media education also involves looking at the regulations, in order to develop students' ability to create consent around the shared rules for future technology (see the concept of media education as media reform[4]).
- **Involve the other local actors** in the effort to achieve digital wellbeing (family doctors, sports associations and religious organisations). Together with schools, family doctors are the actors most able to reach all families, including those less sensitive to the issues of digital education and less involved in other training and information initiatives (see the project Digital Custodians www.custodidigitali.it).
- **Pay attention to the more fragile families, which have a number of difficulties.** The **EYES UP** research shows that digital precocity and other risky behaviour in the use of digital technology in childhood and adolescence are more frequent in contexts where there are existing socio-psychological problems. When providing support for these difficult situations, it is important to take into account protection from digital precocity.

4. Buckingham (2018).

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EYES UP

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