

Generational Relations, Technology and Digital Communication: a Comparison between Multicultural and Native Families

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Abstract

The paper presents some first results of an ongoing research on the transformational decision-making processes within the family dialogue in relation to the use of digital technologies by adults and adolescents for study and work. Are these processes perceived differently within multicultural families than within native families? Besides analysing these issues, the paper presents an interesting insight into the so-called “media diet” of adolescents, with a focus on the pandemic period. The research was carried out by administering a questionnaire to almost four hundred students at a high school in Reggio Emilia (Italy).

Keywords: digital media, multicultural family, high school, digital literacy, domestication.

Abstract

Il contributo presenta i primi risultati di una ricerca in corso sui processi di trasformazione del processo decisionale nell’ambito del dialogo familiare in relazione all’uso da parte di adulti e adolescenti di tecnologie digitali per studio e lavoro. Questi processi vengono percepiti in modo diverso all’interno delle famiglie multiculturali rispetto a quelle autoctone? Oltre ad analizzare tale questione, il lavoro ha prodotto uno spaccato interessante sulla cosiddetta “dieta mediale” degli adolescenti anche durante la fase della pandemia.

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La ricerca è stata svolta mediante la somministrazione di un questionario a quasi quattrocento studenti di un istituto scolastico di secondo grado di Reggio Emilia (Italia).

Parole chiave: media digitali, famiglie multiculturali, scuola secondaria, alfabetizzazione digitale, addomesticamento dei media.

1. *Introduction*

Some academic literature pays considerable attention to narrative processes among young generations regarding the use of social media. This amplifies the generation gap, akin to the one seen in the sixties, when a new digital generation, shaped by personal semiotic devices, emerged. These devices operate at the level of signs and symbols, altering learning methods and mental representations. They also significantly affect intergenerational communication and identities, reconfiguring connections to local context and family (Barone, 2021). This digital pervasiveness requires proficiency in dynamic forms of literacy, which are no longer static or tied to specific goals (Rivoltella, 2020).

This is particularly vital for the educational implications, especially given the integration of smartphones into teaching due to the Covid-19 pandemic (Persi, 2021). However, device usage and literacy practices vary across generations, particularly between natives and migrants.

Recent data suggest reduced disparities between natives and second-generation immigrants, partly due to increased media use among linguistically and culturally equipped families engaged in educational activities (Vitullo *et al.*, 2021). This decrease in generational divides has notably boosted cognitive skills in schools, particularly in metacognition and metacommunication (Livingstone, Blum-Ross, 2020).

2. *Hypothesis*

Sociological literature often emphasises the “distinctive tactics” (Bourdieu, 1979) that define intergenerational interactions, particularly in the context of digital media. This perspective highlights the division created by digital media, portraying them as a source of discontinuity. In contrast, there is another view that emphasises the potential for intergenerational unity, notably within families.

Adolescent Digital Skills: there is a prevalent overestimation of adolescents’ digital skills. Research in Italy has shown that these skills vary due to family cultural capital and familiarity with digital media (Manzato,

2011). The role of cultural context in family dynamics and media adoption warrants further investigation.

Imbalanced Digital Literacy: adolescents' digital literacy is not universally distributed. Studies reveal discrepancies within Italy and across Europe, underscoring the presence of digital illiteracy in some regions (Mascheroni, 2012).

Adult Digital Skills: the assumption that adults' use of both analogue and digital technologies impedes their digital competence lacks solid evidence (Aroldi, Colombo, 2013).

The family environment plays a crucial role in shaping digital inequalities, particularly with respect to the "second level" digital divide, which is marked by variations in digital skills and usage patterns. Research underscores the impact of sociocultural variables, such as specific traditions or values, on the domestication of digital media. However, further research is needed to understand how the "switch generation" affects socio-cultural factors, including traditional values, cultural interactions, and the quality and quantity of intergenerational communication.

3. Objectives

This study investigates the impact of extensive social media use, particularly among adolescents, and their deep immersion in digital environments. The research aims to assess differences in approaches between multicultural or cosmopolitan families, including second and third-generation immigrant households, and native families. It also explores how social practices related to device usage may shape similar habitus (perceptual, thought and action patterns). The research focuses on domestication amid the social changes prompted by the Covid-19 pandemic (Cadamuro *et al.*, 2021), emphasising three main dimensions:

1. Decision making:
 - a) the distinct roles of family members in shaping adolescents' digital habits, including rule establishment, regulatory interventions, and their consequences;
 - b) modes of interaction and negotiation of rules;
 - c) the influence of peers (both within and outside the family) in adopting norms;
 - d) the significance and performative value of family dialogues
2. Exploring family involvement in adolescents' digital literacy regarding social media and socio-cognitive interactions among adolescents,

parents, and siblings. Examining potential variations influenced by cultural and social factors.

3. Analysing behaviours and relationships arising from e-learning during the Covid-19 pandemic, considering changes in living conditions due to reduced physical interactions.

The following sections of the paper describe the methodology used to collect and analyse data (Section 4), the results obtained (Section 5), and the conclusion (Section 6).

4. Methodology

We produced and administered a questionnaire made of 90 items with open- and closed-ended questions to students at a high school in Reggio Emilia (Italy).

In the questionnaire, we proposed items related to the place and meaning of technologies at home, the kind of technologies (mobile/desktop, private/shared), the use of technologies in daily life and during lockdown due to Covid-19 (hours, rules, habits), the differences between students and adults in skills and opinions.

The main concepts that guided the production of the questionnaire are:

- the four phases of domestication that consist in: *appropriation* (acquisition of devices and internet connection), *objectification* (spatial aspect), *incorporation* (influence on daily routine), and *conversion* (relation with the outside world) (Silverstone, 2006; Scheerder *et al.*, 2019);
- the digital skills by the five areas of DigComp framework: information, communication and collaboration, content creation, safety, and problem solving (Punie *et al.*, 2013; Carretero Gomez *et al.*, 2017; Vuorikari *et al.*, 2022).

Before beginning the questionnaire, we defined the terms ‘digital tools’, ‘home’ and ‘adults’ appearing in more items. By ‘digital tools’ we meant smartphones, tablets, desktop computers, laptops, TV, videogame consoles, subscriptions for video on demand platforms, and so on; ‘home’ is the place where students spend the most time in a day beyond schools or other recreational activities (we preferred to specify with respect to adolescents in custodial care or foster home); by ‘adults’ we meant parents, teachers, caregivers, coaches, and so on.

Four areas covered by the questionnaire:

- *General information* (23 questions), containing questions related to personal data, and perception of digital skills in adolescents and adults;
- *Technologies and social media* (26 questions), with questions relating to the kind and number of tools that students have at home, their use in private contexts or at home with other family members, the perceptions of digital tools, internet and social media in students and adults;
- *Technologies for school* (10 questions), where the peculiarities of the use of digital tools in learning activities are investigated;
- *Remote education* (31 questions), this area contains the questions on the organisation and use of digital tools and the internet for studying at home and in the family during the emergency period due to Covid-19.

The questionnaire was administered online in the period between March and April 2022. Herein, we bring a preliminary analysis of the results obtained by using descriptive statistics. In some cases, since questionnaire's variables were mainly qualitative, we used the χ^2 (chi-squared) test on contingency tables to check for independence among the variables in the dataset. The test allows us to rule out that, by classifying observations according to two characteristics (as we will see, for example, the number of members in a household and the number of devices owned), no association is recorded between the two variables, meaning that the differences between the observed and theoretical values are not significant and depend only on chance.

Starting from a socio-constructivist and phenomenological theoretical approach, the research uses a quantitative methodology through the administration of a questionnaire. 362 students replied to the survey. We excluded three observations for missing data. The whole population of the involved school is composed of 1552 students. The respondents represented 23.1% of that population. Although we did not conduct sample significance testing, the high percentage of respondents qualitatively supports the hypothesis that the sample is representative of the whole school population; more investigations should be done to verify whether the results can be generalised to larger populations.

In the sample, the percentage of female students was higher than boys (girls = 83.8%). The average age of the students was 16.6; median and mode values corresponded to 17 years (26.5%). The mean score in

the previous academic year was 7.5 (max = 10). Scores 7 and 8 collected the higher percentage, respectively, 38.7% and 36.5%.

5. Results

In this paper, we describe the results obtained by a preliminary analysis of 36 responses that reply to three research questions:

- Q1. Are there differences in the use of digital and social media tools between multicultural or cosmopolitan families and native families?
- Q2. What is the media diet of adolescents?
- Q3. How was the Covid emergency handled in families using devices? Did it provoke a negotiation between the needs to be met and the introduction of new rules?

Multicultural and native families

We can distinguish two groups in the sample: students from native families (319) e students from multicultural families (40). The first group represented 22.0% of the total number of students in the school, belonging to Italian families (1450); the second group corresponded to 41.2% of the multicultural students (102), thus being overrepresented.

35 of the 40 students from multicultural families stated that their family has been in Italy for more than 10 years. In 7 families, parents came from two different regions, in 4 cases one of the two parents was Italian. A list of the main countries of origin follows: 18, Central and Eastern Europe (Albania, Moldova, Poland, Romania, Bulgaria, Ukraine); 13, Africa (Morocco, Ghana, Senegal, Tunisia, Ivory Coast, Nigeria); 5, Asia (China, Palestine, Sri Lanka, Turkey); 2, Central and South America (Peru, Dominican Republic).

Multicultural families seemed more numerous than Italian ones: 40% had more than five members compared to 25.4% of Italian families.

Digital skills' perceptions

Table 1 shows the replies to questions in a 4-level Likert scale related to digital skills. The skills used are those in DigComp framework supplemented by two skills on the use of word processors and presentation software.

As shown in Table 1, students in both multicultural and Italian families are more confident in their digital skills than adults. Usually, mul-

multicultural students had a worse perception of their parents' skills than Italian students. Students were more confident in online searching, interacting, and protecting; they were less sure to be able to create digital contents or solve problems.

We can observe two exceptions:

1. Italian students believe that the adults are more skilled at “protecting” and “solving problems” than themselves;
2. the use of a word processor is the only case in which more than half of the Italian students indicated the adults as being skilled.

	DigComp								Basic skills					
	Online Search		Internet		Create		Protect		Solve problems		Word Processor		Presentation Software	
	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4
<i>Multicultural students</i>	32.5	67.5	27.5	72.5	62.5	37.5	42.5	57.5	70.0	30.0	15.0	85.0	15.0	85.0
<i>Italian Students</i>	41.0	59.0	24.5	75.5	58.9	41.1	54.5	45.5	74.0	26.0	13.8	86.2	20.4	79.6
<i>Multicultural adults</i>	70.0	30.0	70.0	30.0	92.5	7.5	60.0	40.0	72.5	27.5	62.5	37.5	70.0	30.0
<i>Italian adults</i>	53.0	47.0	65.5	34.5	70.6	29.4	51.4	48.6	59.9	40.1	35.1	64.9	55.2	44.8

Table 1 – Digital skills' perception of students and adults (percentage, Multicultural students: N=40, Italian students: N=319).

Mobile, desktop, and private tools

81.3% of students declared that five or more mobile devices are present in their houses; 49.0% had five or more desktop devices; the distribution among two, three, and four devices were instead more similar (respectively 11.7%, 17.0%, and 13.4%).

We can find a similar distribution of mobile tools in multicultural and Italian families; differences can be observed in the percentage of desktop tools, where 60.0% of multicultural students against 34.9 % of Italian ones declared to have less than three desktop tools.

The mode for both groups related to the number of (mobile and desktop) tools that adolescents considered “private” is two (50.0% for multicultural students; 43.2% for Italian students). Private tools are placed in the bedroom and/or in rooms in the house used mostly by students for 78.6% of them.

We conducted the χ^2 test for seven couples of variables related to the kind of tools (mobile/desktop), the number of family members, and the number of tools considered private for Italian and multicultural students. Before using the test, we merged some contiguous categories to obtain expected frequencies above 5 units (Newbold *et al.*, 2021).

We rejected the null hypothesis of independence for the couples:

- number of mobile tools/number of family members;
- number of desktop tools/number of family members;
- number of mobile tools/number of desktop tools;
- number of desktop tools/family origins.

This means that an association (to be further investigated) exists between the distributions of these variables.

Instead, we accepted the null hypothesis for the couples:

- number of private tools/number of family members;
- number of private tools/family origins;
- number of mobile tools/family origins.

This means that the variables did not influence each other within each couple and that the number of tools considered private did not depend on the size or country of origin of the family; similarly, the number of mobile tools in the home is not related to the ethnic origin of the family.

Hours using technologies alone and with families

Without great differences between Italian and multicultural students, as seen in Figure 1, around a third of students declared to spend more than five hours a day using digital tools. About the same percentage of students declared to spend one hour a day together with other family members; a lower percentage two hours; around 22% said not to use devices with others in the family. The involved members of the family are parents or brothers/sisters. Data showed that adolescents are immersed in digital technologies for a large part of their days.

About half of students declared to spend time with other family members, talking about technologies (50.5% Italian, 35.0% multicultural) or watching videos together (56.7% Italian, 45.0% multicultural).

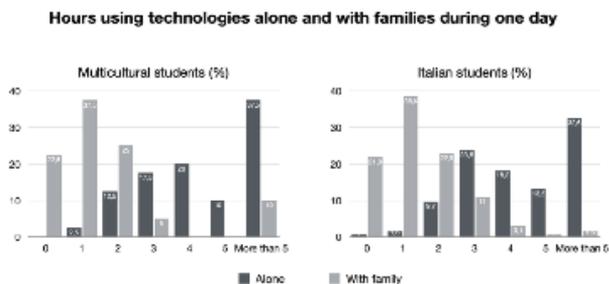


Figure 1 – Hours using technologies alone and with families by Italian and multicultural students during one day (Multicultural students: N=40, Italian students: N=319).

Rules

No rules in the use of digital tools were foreseen for 76.9% of students. Splitting the sample into two age groups 13-16 and 17-20, we can see that in the first group, the percentage of students with rules increased to 33.7%. 13.4% of students aged 17 to 20 received rules from their parents. New rules were added during the lockdown for 10.6% of the students.

The main rules that students quoted in the questionnaire were:

- to use devices for n hours during the day;
- not to use devices at (late) night, at mealtimes, or while studying;
- to receive parental authorisation to download applications;
- to use social networks responsibly;
- not to publish personal information.

Almost as a compensation for the scarcity of rules, 57.5% of multicultural students and 66.8% of Italian students reported good behaviour in using digital tools or surfing the web at home.

During lockdown

Devices and connection at home were insufficient for 22.2% and 19.5% of the families during the lockdown due to Covid-19. In more than half of Italian families, one or two parents worked from home, unlike in multicultural families, where only 12.5% of students had parents at home. 71.0% of students declared that other family members needed connection in both kinds of families.

The main solutions declared to solve the lack of tools were:

- to buy a new device;
- to borrow it from relatives or friends, school or municipality;
- to alternate smartphones and computers with family members as needed.

Instead, the solutions for lack of connection were:

- to check router;
- to buy Wi-Fi equipment;
- to use the phone's hotspot;
- to take turns with other family members;
- to change room;
- to switch off the webcam;
- to warn the teachers;
- to give priorities to those who had something more important to do;
- lastly, to have a lot of patience.

6. *Conclusion*

The analysis presented here brings to attention some preliminary results that need further in-depth investigation; at the same time, it opens up new research questions, such as comparison with data from other European and international contexts.

The differences in the responses given by students belonging to multicultural and Italian families regarding the use of digital devices differ on a few points (Q1). There are fewer differences than expected, probably because the families of the multicultural students involved in the sample have been in Italy for a long period. The origins and the number of family members seem to influence the number of desktop devices reported by students. Some multicultural students have less availability of desktop tools, while there is not a remarkable difference in the availability of mobile tools. There are no differences in the time of use; some Italian students talk more about digital technology, video, and rules in the family than multicultural ones.

European average of self-reported digital skills among 16-19-year-old is 69.2%. The value in Italy drops to 58.3%. This percentage represents individuals with basic or above basic digital skills in all five areas of DigComp based on performed activities corresponding to the skills (Eurostat, 2023b). Our sample differs from this data for the age and index used, even if similarly based on DigComp. However, in general, (both Italian and multicultural) students show a good perception of their own digital skills (in particular, for information, interaction and security). In our case, we can observe a poorer perception of the digital skills of their reference adults by adolescents. Multicultural students indicate that adults' skills are worse than Italian students do for their reference adults.

Continuing with the responses to research questions, one third of the surveyed students use devices alone for several hours, namely more than 5. There are not as many rules by parents (especially as age increases), but at least some of the students experienced some moments of confrontation within the family (Q2). The Covid emergency found one fifth of student families in our sample unprepared or unable to handle the situation with devices at home for study and work, hence many solutions were put in place (Q3).

Data from the European context (Eurostat, 2023a) report that young people use the net more than adults. In 2022, 96% of 16-29-year-old in the EU said they use the internet every day, compared to 84% of the adult population. This gap is also more significant in social networking.

According to this data, young people are more likely to use the internet so as to follow online courses and participate in social and political life than the adult population.

In the same way, looking at the USA context (Common Sense, 2022), we find confirmation of the high daily consumption of digital devices noted in our study. Teens in the 13-18 range spend 8:39 hours in entertainment screen use; this consumption has increased by about 2 hours in the last six years. In the USA, there are interesting changes based on ethnicity and household income in 2021. White adolescents have entertainment screen consumption of 7:49 hours; Blacks 9:50, Hispanic/Latino 10:02. Similarly, the time spent on entertainment screen decreases as income increases (Highest income 7:16, Middle: 9.34, Low: 9.19). Blacks, Hispanics/Latinos, and adolescents in lower-income families cannot access a computer at home, which generates inequality and confirms the lesser availability of desktop devices in our analysis.

Possession of private devices for adolescents in the USA has been increasing sharply over the past six years: in 2015, 67 % of adolescents had a personal phone, while today 88% do. In our study, roughly half of the students consider two digital devices to be private.

Students are immersed in digital tools, spending many hours a day using them: what do adolescents do in this time? The USA study says that adolescents spent most of their time watching videos (3:16 hours), followed by gaming (1:46), and social media (1:27). In particular, the latter, while being among the most frequent activities daily, ranks third among the things adolescents like (online video 62%, gaming 39%, social media 34%).

Our research has the limitation to involve only one school; nonetheless, it allows us to explore the paths of integration among Italian and multicultural families in the Italian context, and the role that society, school, and family play in ensuring that adolescents acquire digital skills to behave as responsible citizens, including online.

Starting from the same dataset, a paper on students' perceptions of digital skills, opinions on the digital tools, and generational gap has recently been published (see Rossi *et al.*, 2023).

In another analysis of these data, also using multivariate analysis (Bartholomew *et al.*, 2008), we are creating clusters of students similar for using digital devices to define tendencies in opinions and digital skills.

Besides, according to the mixed methods approach (Trincherò, Robasto, 2019), we have collected novel data from focus groups with small numbers of students in order to deepen some topics by listening to students' voices.

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