

Technology as a daily resource for Italian college students during the lockdown period. A qualitative study

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Abstract. The restrictions imposed during the COVID-19 pandemic have challenged human daily activities and habits worldwide. In this novel scenario, technology proved to be a resource for individuals and communities. A qualitative study explored the typologies of services primarily used by Italian university students in Spring 2020 during the first lockdown period. Technology emerged as a major resource, facilitating daily tasks such as learning activities, relationships, and leisure.

Keywords. COVID-19, Technology Use, University Students

1. Introduction

Between March and June 2020, Italian citizens experienced a strict lockdown period caused by the first COVID-19 outbreak. The fast worldwide spreading of the pandemic, with related compulsory isolation and social distancing, led to an increasingly intensive use of technologies by individuals, families and communities [1,2]. Daily tasks in any life domain were transformed by technology. This sudden change entailed both challenges and opportunities; in particular, it forced individuals to find different social interaction patterns and to develop new daily habits. Like any other category of citizens, students experienced a drastic reduction in personal and social freedom that pushed them to spend more time online [3]. Digital services emerged as a major resource to cope with the lockdown phase, allowing them to perform learning tasks, keep in touch with family and friends, and engage in leisure activities.

The aim of this study is to provide an exploratory overview of the technological resources perceived as useful by a group of Italian university students during such an unprecedented situation.

2. Materials & Methods

2.1 Participants

This study relies on data collected among 741 students attending courses in healthcare professions, humanities, and political science at the University of Milano. Overall, 274 participants (36.9%; see table 1 for demographic features) answered to an optional open-ended question investigating useful services, and were thus included in the analyses.

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2.2 Materials and Procedures

After approval from the Ethical Committee of the Università degli Studi di Milano, students attending different bachelor's and master's degree courses were invited to participate in an online survey. Participants' informed consent was obtained, and anonymity was granted throughout all study phases. Data were collected between April 17 and May 18, 2020, covering two different phases of the lockdown period: phase 1, from March 12 to May 3 was characterized by very strong restrictive measures; during phase 2, from May 4 to May 18, there was a partial reopening of core productive activities, with social distancing measures still in place. Participants completed an online questionnaire including a demographic section, scales measuring psychological processes, and an optional interview based on open-ended questions. They were free to conclude their participation at any time during the study. Based on the study aims, analyses were focused on a specific open-ended question included in the interview: *Which institutions or services are most helpful to you in your daily activities? For each of them, can you specify how are they helping you?*

2.3 Coding Procedure

Answers to the open-ended questions were coded by two independent raters; discrepancies were solved through the involvement of a third expert researcher. Students provided complex answers, leading to the identification of multiple semantic units. Units were transformed into numeric items, organized into broader functional categories, based on a validated coding system already applied in previous studies [4] and corresponding to the purpose/objective of technology use. The coding procedure for each answer unit comprised firstly of the identification of the related category of purpose, and then the specific numerical item to be attributed to the unit. For answer units not fitting any available item, a new item was added to the category. Up to four answer units were retained for each participant.

2.4 Statistical Analysis

The data analysis was aimed at identifying which technological services were primarily used by the students and for which purposes. Considering that each participant could provide more than one answer unit for each question, Chi-square tests were used to compare the percentages of students providing at least one answer in each category, grouped according to demographic features: type of curriculum, gender, and lockdown phase.

3. Results

The 274 participants who answered the question referring to technological services did not differ in demographic features (age, gender, marital status, university degree, and lockdown phase) either from those who did not complete the optional answer, or from those who referred to other typologies of services. Out of a total of 500 answer units, 393 (78.2%) referred to technological services. They were grouped into five categories based on the purposes of use: utility services, study/work, socialization, leisure, and civic engagement. Overall, 42.0% of the participants quoted technology in relation to utility services, 35.8% to study/work, 26.7% to socialization, 18.6% to leisure, and 5.1% to civic engagement. No significant differences emerged in the percentage distribution of participants referring at least one time to each of the five categories across curricula, and by gender or lockdown phase.

4. Discussion

Mobility and social restrictions imposed by governments during the COVID-19 pandemic made technologies essential to perform daily activities and preserve human interactions, radically transforming citizens' lives across all daily domains.

Starting from these premises, this study investigated which technological services were adopted by university students to deal with this situation and for what purposes (see Table 2 for exemplary answers by categories). Results showed that technologies were primarily useful for satisfying practical needs. Internet services allowed citizens to purchase basic goods and access services from home. Almost half of the participants in our study referred to internet-based services such as online shopping and consequent home delivery of food, music, and books. Notably, data were collected in the early stage of the lockdown in which "panic buying" was taking place [5,6]. In those days, various products including protective equipment such as gloves and masks were bought massively, along with flour and yeast. Universities engaged in remarkable efforts to move to virtual platforms for all teaching activities and services including classes, supervision sessions, exams, and access to library resources. Although students had to adjust to a different learning experience, the opportunity to perform all the routine academic activities provided them with a sort of "normality", helping them structure their daily time and pursue their academic goals in a period of uncertainty.

At the relational level, the imposition of social distancing to prevent the spread of the contagion negatively impacted young citizens' relational life [6,7]. Nevertheless, the availability of social networks and real time communication platforms allowed individuals to maintain connections and interactions with family and friends, as highlighted by our participants [8]. These resources were especially relevant to off-site students who experienced a stronger sense of isolation from the family, further enhanced by the impossibility of travel and by worries about family health conditions. Technological tools also allowed students to preserve and cultivate other types of relationships including participation in community activities and religious rituals. Finally, technology offered a variety of leisure experiences. The students involved in the present study reported engagement in a variety of entertainment activities, with access to movies, documentaries, and news. They reported gaming online with friends, or watching the same movie together and exchanging comments about it in a live chat [9,10]. In line with European data, some participants also reported watching TV as a source of updated daily news and interesting, pleasant broadcasts [11].

Performing physical activity in a period of restrictions required high creativity; in this domain, technology was again helpful in transposing sport training programs to virtual platforms. The students reported exercising at home, but preferably in the open air whenever a terrace or garden was available to them.

It is worth noticing that participants' answers were consistent with findings obtained from other studies. Social confinement promotes new ways of socializing and connecting with others [12]. In particular, web-conferencing systems such as Zoom, Teams, or Google Meet were used for organizing synchronous social events, participating in prayer, and cultural or reading meetings.

4.1 Limitations

This study has several limitations. Data were collected in a single University. Recruitment of participants, as well as completion of the open-ended question on the use of technology were voluntary, thus implying self-selection. Random sampling procedures were not conducted, thus reducing the generalization of the results.

4.2 Conclusion

For the participants in this study, technology represented an effective resource to cope with the lockdown-related restrictions across life domains. It is however worth noticing that over one-third of the students deemed technological services as useful to grant continuity to their academic pathway, while less than 20% referred to leisure.

This finding confirms the relevance of e-learning strategies to help students preserve their daily schedule, suggesting that technological resources, even though massively introduced to counterbalance the restrictions imposed by the pandemic, could be fruitfully integrated in the academic practice, together with face-to-face activities.

Table 1. Demographic characteristics of participants

	PARTICIPANTS N. 274
AGE MEAN (SD)	23.82 (6.98)
AGE RANGE	19-63
GENDER (% FEMALE)	72.2
WORKERS (%)	28.8
MARITAL STATUS – SINGLE (%)	91.2
DEGREE	
HEALTHCARE (%)	36.1
HUMANITIES (%)	32.5
POLITICAL SCIENCE (%)	31.4
LOCKDOWN PHASE¹:	
1 (%)	177 (64.6)
2 (%)	97 (35.4)

(1) Phase 1 = complete lockdown; Phase 2 = partial reopening.

Table 2. Exemplary answers in the main categories

Purpose of Use	Participants' answers ¹
Utility Services	P39: " Home delivery services are absolutely useful in everyday life, as they allow us not to leave the house." P56: " The home shopping service or the service of pickup up from the shop ... The home delivery of books and study materials ...". P142: " Definitely all kinds of online services , especially sales services (such as amazon, or other online shops), allowing me to receive everything without leaving the house." P60: " Online shops that allow you to buy books, otherwise I would have no way to study."
Study/Work	P8: " The University - especially professors ... - is certainly helping me a lot. I feel supported as a student but also as a person in my university career." P74: "... university activities help me give regularity to my days" P138: "... services offered by the university , even if not perfect, are indispensable in order not to feel lost". P109: " The computer, internet . They allow connection with people, working, and studying."
Socialization	P58: "I use Zoom to see my friends, to chat, to play and study together, and to follow Holy Mass every day. WhatsApp is useful for video calls with one friend at a time or with my boyfriend." P60: "... Systems that allow you to make video calls and social networking, to keep in touch with people I love, colleagues and professors." P114: " Definitely instant messaging and video calling services , with which it is easier to study with my classmates or contact my friends."
Leisure	P30: " Online services for reading and watching films or documentaries." P49: "... YouTube and Instagram for exercising." P92: "... The radio keeps me company and films on TV are big time killers"
Civic Engagement	P180: "...the parish with the streaming service allow us to feel like a community even at this time." P220: "It is helping me promoting culture and reading from a distance . A community has been spontaneously created and it makes us feel joined."

(1) Question: Which institutions or services are most helpful to you in your daily activities? For each of them, can you specify how are they helping you?

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