

Hyperconnectivity and digital resignation among higher education students

La hiperconexión y la resignación digital entre el estudiantado de enseñanza superior



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Abstract:

Over the past decades, ICTs have permeated every facet of society, with a particularly pronounced impact on higher education students. This study delves into the Internet-mediated interpersonal relationships of students at the University Complutense of Madrid (UCM), the representation of habits and the use of ICTs. By means of an online survey, data were collected from a total sample of 2,893 participants spanning various disciplines, ages, and academic programs. The findings reveal gender and age-based disparities in preferences for digitally mediated relationships, as well as dysfunctional patterns associated with digital usage that manifest differently across age groups. Students predominantly express a penchant for being consistently connected to the internet or doing so only, when necessary, with a minority indicating a lack of enjoyment in digital connectivity. This study has allowed the identification of a digital landscape characterized by hyperconnectivity and digital resignation, the latter emerging as a noteworthy trend in the daily lives of university students as it may be linked to dysfunctions arising from ICT use.

Keywords:

University students; hyperconnectivity; digital resignation; interpersonal relationships; ICT dysfunction.

Resumen:

Las TIC han penetrado todos los ámbitos de la sociedad desde hace décadas. Esta incursión se ha hecho aún más intensa dentro del alumnado de enseñanzas superiores. El objetivo principal de este estudio es indagar en las relaciones interpersonales del estudiantado de la Universidad Complutense de Madrid mediadas por Internet, la representación de los hábitos y usos que hacen de las TIC. La recolección de los datos se realizó mediante una encuesta online entre el estudiantado de la Universidad Complutense de Madrid (UCM), con una muestra total de 2.893 participantes de todas las disciplinas, edades y titulaciones. Se han encontrado diferencias por género y edad en cuanto a las preferencias en las relaciones mediadas digitalmente, y disfunciones derivadas de los usos digitales que les afectan según la edad. El estudiantado afirma principalmente que le gusta estar siempre conectado a Internet o que lo hace solo cuando es necesario, y son minoría quienes no disfrutan de la conexión. Estos resultados han permitido identificar un escenario digital caracterizado por la hiperconexión y la resignación digital, siendo esta última una nueva tendencia a considerar en la cotidianidad de su vida universitaria, ya que podría estar ligada a disfunciones derivadas del uso de las TIC.

Palabras clave:

Estudiantado universitario; hiperconexión; resignación digital; relaciones interpersonales; disfunciones de las TIC.

1. Introduction

Over the last two decades, society has become increasingly dependent on ICTs (Information and Communication Technologies) (Aguilar and Terán, 2021), which have permeated every area of social life (Hepp, 2020) providing new opportunities for leisure, expression and social relations (Carrasco *et al.*, 2018), among other aspects. This has occurred so rapidly that it has imposed abrupt and disruptive transformations (Aragüez, 2017).

This penetration has raised concerns about the use that can be made of ICTs (Díaz-Vicario *et al.*, 2019; Sánchez-Gómez *et al.*, 2020), especially among young people. Indeed, having grown up with ICTs, young people are their main consumers (González-Cortés *et al.*, 2020). Within this sector of the population, students represent the main market share (Rodríguez-Ceberio *et al.*, 2019) – they are the group least affected by the digital divide as they have the necessary skills to use ICTs (Fundación Telefónica, 2022) and, consequently, they are the ones who use smartphones and social networks the most (INE, 2022).

Their high digital consumption, even if it involves new forms of socialisation and school and work performance, may affect their mental health (Sánchez-Gómez *et al.*, 2020). These negative effects of ICTs on socioemotional life have been termed “techno-stress” by Taki (2022). According to Sánchez-Gómez *et al.* (2020), this phenomenon manifests itself in two ways. On the one

hand, they refer to techno-addiction, defined as the “uncontrollable compulsion to use ICTs for long periods of time, causing the subject to become absolutely dependent on the technology”. On the other hand, they identify “techno-fatigue”, reflected in the “presence of tiredness, mental fatigue or headache due to prolonged use of technology” (Sánchez-Gómez *et al.*, 2020, p. 27).

1.1. Techno-addiction and hyperconnectivity

Until the work of Marks (1990), addiction had solely been conceived as a physical and psycho-emotional dependence on a chemical substance, without considering its possible association with an activity. Since then, the term addiction has been defined more broadly – it is understood as an “impulse dependent on a habit of a certain activity or substance use though it has destructive effects on the physical, social, emotional, and mental health of the individual” (Kesici and Fidan, 2018, p. 235). In the case of ICTs, we refer to an addiction that takes the form of the overuse of any digital media or platform such as smartphones, social networks or video games (Cuquerella-Gilabert and García, 2023).

Techno-addiction affects not only individuals, but also their social environment (Carrasco *et al.*, 2018). Digital media sometimes partly monopolise attention (Kesici and Fidan, 2018), as techno-addicted people are unable to curb their impulse towards digital consumption (Marín *et al.*, 2020), which prevents them from paying attention to others or carrying out other types of activities – they remain connected despite having to perform other tasks. In fact, the literature has suggested that this addiction is linked to lower school and work performance (Parra *et al.*, 2016), sleep loss (Díaz-Vicario *et al.*, 2019) or emotions such as anxiety and overwhelm (Doval-Avenidaño *et al.*, 2018; Marín *et al.*, 2020).

Recently, studies in techno-addiction have led to new phenomena that reinforce the idea that a techno-addicted person feels the need to be permanently connected to the Internet (Carrasco *et al.*, 2018). Among other terms, we are referring to nomophobia, i.e. the phobia of not being able to connect to the network, or FoMO (*Fear of Missing Out*). The latter, understood as the fear of missing out on experiences and being socially excluded (González-Cortés *et al.*, 2020), has been detected especially among millennials who, as a result, tend to feel more anxiety and/or overwhelm towards the use of ICTs and the management of their social networks than other generations (Grashyla and Paramita, 2021).

In non-extreme cases, digital media abuse has been referred to in the academic literature as “hyperconnectivity”, understood as excessive connection to ICTs (Taki, 2022). Like techno-addiction, hyperconnectivity has both individual and social consequences (Díaz-Vicario *et al.*, 2019; Doval-Avenidaño *et al.*, 2018), such as lower academic performance, fatigue due to sleep deprivation, or difficulties in socialising. This behaviour, mostly present among young people and especially among students, is based on the pleasure a person feels when going online. When they do not manage to control their impulse to achieve this feeling of pleasure, i.e. when their hyperconnectivity becomes ritualised, they may be considered as techno-addicted.

Aware of the dysfunctions associated with high ICT usage, some users have changed their behaviour, which responds to a new phenomenon: disconnection. Defined by Woodstock (2014, p. 1983) as the intentional and significantly limited use of digital media, it is further explained as trying to connect as little as possible (Casas-Mas *et al.*, 2023) and is therefore regarded as a response to hyperconnectivity and digital resignation.

1.2. Digital resignation as an instrumental form of ICT adaptation

Unlike the techno-addicted or hyperconnected, other types of users manage to have a non-problematic use of ICTs, which they employ, for example, to maintain or consolidate relationships previously established in the offline space (Villalón, 2016). Velarde and Casas-Mas (2018), in their study on digital media and university students, refer to people who prefer to relate more in person than virtually as instrumental consumers. This way of using ICTs is utilitarian, intentional, and voluntary, which contrasts with the ritual and/or addictive use of digital media (Doval-Avenidaño *et al.*, 2018). The instrumental consumption of digital media could represent a user's response to the harmful consequences of techno-addiction and hyperconnection and, therefore, be linked to greater academic efficiency, the desire to improve social relationships, or to try new forms of leisure. Additionally, this consumption differs from disconnection in that the instrumental user connects for specific purposes but does not avoid using the Internet. However, a disconnected person tries not to use digital media at all.

However, on many occasions, it can be challenging for the user to sustain instrumental digital consumption given the number of inputs they are subjected to daily (e.g., email, social media, etc.) (Velarde and Casas-Mas, 2018). It is also worth mentioning the necessity for students to connect to the Internet to carry out university tasks, such as information retrieval, completing assignments, or submitting them to professors. Therefore, even if they prefer face-to-face interactions, instrumental users may have no choice but to accept the digital realm, in other words, to resign themselves.

The concept of resignation has been considered under the term "fatalistic passivity" by Forman (1963, p. 289) when he observed, during the Cold War, that when a nuclear attack alarm sounded in an American city, citizens did not react and continued with their activities. Forman suggested that they behaved this way either out of inertia due to not knowing how to act, not believing the alarm was real, or not seeing the point of taking action. Building on this observation, Draper and Turow (2019, p. 1828) understand resignation as "a rational emotional response in the face of undesirable situations that individuals believe they cannot combat" meaning they accept the absence or lack of control.

Applied to the ICT domain, the concept of resignation has been defined by the same authors as "the condition produced when people desire to control the information digital entities have about them but feel unable to do so" (Draper and Turow, 2019, p. 1824). Thus, they conceive digital resignation as the feeling derived from one of the effects of ICT consumption, namely, data handling, but not from the perspective of forced use of digital media. Authors such as Pangrazio *et al.* (2023) have drawn on the concept of "digital resignation", coupled with that of "surveillance realism". Their study warns of the need for students to be encouraged to engage meaningfully. According to their findings, in this process they have to "resist" the restrictions generated by the so-called "datafication".

In the present study, we adopt the perspective of "digital resignation", which needs further research, and therefore understand this concept as the rational emotional response of instrumental users to forced or unwanted use of digital media. Specifically, a digitally resigned individual will seek to connect only when necessary, i.e., when the context compels them to do so. Additionally, we start from the premise that resignation may be linked to potential dysfunctions arising from ICT use, as it could be associated with behaviours that negatively impact physical and emotional health, as well as the social and academic lives of users.

In accordance with the academic literature reviewed, the general objective of this research is to find out and describe the perception that students at the University Complutense of Madrid (UCM) have of the uses they make of ICTs (O1). To this end, the following specific objectives have been set out:

- To identify the preferences (virtual or face-to-face) of university students when relating to their (potential) partners and peer groups (O1.1).
- To establish what type of users they identify with according to whether or not they enjoy the virtual connection (O1.2).
- To determine the dysfunctions derived from digital consumption that affect their daily lives (O1.3).

Following these (specific) objectives, this present research aims to test three hypotheses. Considering the findings of previous studies that pointed out that, despite being highly connected, young university students prefer face-to-face mode for their social relationships (Nobles *et al.*, 2015; Ochoa and Uribe, 2015), we suggest that University Complutense of Madrid (UCM) students prefer to relate to their (potential) partners and peer groups face-to-face (H1).

Likewise, the literature reviewed has shown that a link may be established between university youth and hyperconnectivity (Carrasco *et al.*, 2018; Doval-Avendaño *et al.*, 2018; Marín *et al.*, 2020), but it has not linked students with digital resignation – a concept never addressed in this specific context. In this study, we consider that among university students there might be subjects who fall into the category of resigned users as a way of adapting to a digital environment that demands a high level of dedication. Therefore, we propose to corroborate whether digital resignation, understood as the rational emotional response of instrumental users to a forced or unwanted use of ICTs, may be considered as a category to classify students according to their use of ICTs (H2).

Finally, based on empirical results that have shown that ritualised ICT use is linked to the substitution of other types of face-to-face activities (Sánchez-Gómez *et al.*, 2020), sleep deprivation, poor academic performance (Díaz-Vicario *et al.*, 2019; Parra *et al.*, 2016), or overwhelm caused by the management of social networks (Doval-Avendaño *et al.*, 2018), it may be anticipated that hyperconnected and digitally resigned students present dysfunctions derived from their use of ICTs (H3).

2. Methodology

The research is based on an online survey sent by email to all University Complutense of Madrid (UCM) students between 1 and 22 February 2022. The distribution, monitoring and collection of the questionnaires answered through the Google Forms platform was carried out by the University Complutense of Madrid (UCM) Student Observatory.

2.1. Universe and sample

In the 2022 academic year, the universe of students enrolled in official University Complutense of Madrid (UCM) studies was 71,702. Based on this census, the final sample analysed consisted of 2,893 students, with a sampling error of $\pm 1.83\%$ (95% confidence level) and $\pm 2.41\%$ (99% confidence level). Both levels were calculated according to the worst-case option of $p = q = 50\%$. The results by gender, age, field of study and type of degree have been weighted to ensure that they are representative of the total University Complutense of Madrid (UCM) student body.

2.2. Instrument

The basic questionnaire of the survey was structured in five blocks of questions about students' digital consumption. This article deals with the results obtained in three of these blocks, namely: interpersonal relationships; habits and uses of ICTs; and type of user. In accordance with the specialised literature on problematic uses of digital media, we understand this term to encompass any behaviour associated with neglecting tasks, reducing hours of sleep, and being inattentive in class to stay connected, as well as a sense of overwhelm related to this connectivity (Carrasco *et al.*, 2018; Díaz-Vicario *et al.*, 2019; Doval-Avenidaño *et al.*, 2018; Kesici & Fidan, 2018; Parra *et al.*, 2016; Sánchez-Gómez *et al.*, 2020). Based on these contributions, the following questions were formulated:

1. Interpersonal relationships. "Indicate your preferences regarding personal relationships by selecting the way you prefer to engage in each activity. For each activity, choose between: a) Prefer to do it in person; b) Prefer to do it virtually; c) Both ways/ no preference; and d) Ns/Nc (Not sure/Not applicable)."
 - a) "Finding a date or partner".
 - b) "Breaking up with a partner".
 - c) "Meeting a good friend".
 - d) "Integrating into a new group of friends or colleagues".
2. Habits and uses of ICTs. "Below, you will read a series of situations related to Internet usage. Indicate in each case if it happens to you or if you experience it".
 - a) "I start browsing the Internet even when I have other things to do".
 - b) "I sleep less and feel more tired because I spend more time on the Internet".
 - c) "I usually connect to the Internet during my classes for activities unrelated to the teacher's explanation".
 - d) "I feel overwhelmed by the daily management and maintenance of my social networks through the Internet".
3. Type of user. "How would you describe yourself as a technology user? Choose only one answer".
 - a) For hyper-connected individuals who take pleasure in being online: "I like to be connected all the time".
 - b) For disconnected individuals who intentionally and significantly limit their digital consumption: "I try to connect as little as possible".
 - c) For digitally resigned individuals who will reluctantly use ICTs only when the context compels them: "I connect when I need to".

2.3. Data analysis

A statistical analysis was performed by the integrated data management company ODEC, using SPSS 22.0 software. Statistically significant differences were tested using Chi tests (with a confidence level of 95 %), for a universe of N = 2,893.

3. Results

The obtained results are organised around the three blocks previously presented – interpersonal relationships, habits and uses of ICT among university students, and type of user – and are examined based on gender and age differences among the study respondents.

3.1. Interpersonal relations, virtual or face-to-face?

As can be observed in Table 1, when it comes to finding a date or partner, 80% of women prefer to do it in person, while three out of ten men state that it is indifferent to them whether this is done online or offline, and this increases to four out of ten among non-binary individuals.

Table 1. Preferences for personal relationships

Relationship preferences		Total (%)	Gender				Age (years)			
			Female	Male	Non-binary / Other options	Ns/Nc	18-19	20-21	22-25	Over 25
		100	70.1	26.9	1.8	1.2	16.0	23.1	21.9	29.8
Finding a date or partner	Prefer to do it in person	76.0	79.2+	69.6-	53.8-	66.7	79.4+	76.9	74.6	72.7-
	Prefer to do it virtually	2.7	2.3-	3.7+	5.8	-	1.7-	3.6	3.0	2.9
	Both ways / no preference	21.2	18.4-	26.6+	40.4+	33.3	19.0	19.5	22.4	24.3+
	Ns / Nc	-	-	-	-	-	-	-	-	-
Breaking up with a partner	Prefer to do it in person	90.5	91.7+	87.8-	84.6	91.7	91.3	91.6	90.9	88.3-
	Prefer to do it virtually	2.0	1.7	3.0+	-	-	1.8	1.2	3.0+	2.1
	Both ways / no preference	7.5	6.6-	9.3+	15.4	8.3	6.9	7.2	6.2	9.6+
	Ns / Nc	-	-	-	-	-	-	-	-	-

Meeting a good friend	Prefer to do it in person	83.7	84.8+	82.5	65.4-	72.2	83.3	83.7	85.3	82.6
	Prefer to do it virtually	1.1	0.9	1.2	5.8	-	1.2	1.0	0.8	1.2
	Both ways / no preference	15.3	14.3-	16.3	28.8+	27.8+	15.5	15.3	13.9	16.2
	Ns / Nc	-	-	-	-	-	-	-	-	-
Integrating into a new group of friends or colleagues	Prefer to do it in person	82.4	83.4+	81.2	67.3-	69.4	82.7	83.1	84.7	79.4-
	Prefer to do it virtually	2.9	3.1	2.1	7.7	5.6	2.7	3.9	2.4	2.8
	Both ways / no preference	14.7	13.5-	16.7	25.0+	25.0	14.5	13.0	12.9	17.8+
	Ns / Nc	-	-	-	-	-	-	-	-	-
Basis	2,893		2,028	777	52	36	839	668	634	752
Average	25.21		24.14	28.29	22.94	22.53	18.44	20.49	23.06	38.78
Deviation	10.54		9.25	13.10	7.92	5.97	0.50	0.50	1.04	12.91

Source: prepared by the authors

Students aged 18 to 19 years old are the group that most prefers to do it in person (79.4%), whereas those over 25 years of age fall below the average in their preference for in-person interactions and surpass it when considering both forms.

When ending romantic relationships, it appears unequivocal that women strongly prefer to do it in person (over 90%), compared to men (87.8%) with a preference for in-person interactions, and lower than the average when stating a preference for both forms (almost one in five). University students aged 22 to 25 also lean towards virtual means to break up with their partners, while those over 25 prefer to do it in both ways.

In seeking good friendships, 85% of women prioritize in-person interactions, contrasting with non-binary individuals or those who do not declare their gender (over 25%). In this aspect, there are no significant differences between men and women or among age groups.

Finally, women and men respond nearly identically in their preference for integrating with friends or like-minded individuals. However, a quarter of non-binary students stand out for finding it indifferent to do it in both ways, and they fall below the average in their preference for in-person interactions (67.3%). Regarding age, being over 25 matters in social integration – almost one

in five would do it both online and offline, and this age group is below the average in their preference for joining new groups in person.

3.2. Dysfunctional student states resulting from ICT use

As shown in Table 2, nearly half of female students say that they browse the Internet, even if they have other things to do, compared to one in ten men who deny this. Age is a determining factor for three of the age groups, with 20-21-year-olds being the most likely to do so (half of them), followed by 18-19-year-olds (47.1%) and 22-25-year-olds (46.5%). As they get older (over 25), this situation happens only sometimes to slightly more than half of them (51.9%) and two out of ten respond that they do not give up other activities to use the Internet.

Table 2. Habits and uses of ICTs according to gender and age variables

Habits and uses of ICTs		Total (%)	Gender				Age			
			Female	Male	Non-binary / Other options	Ns/Nc	18-19	20-21	22-25	Over 25
		100	70.1	26.9	1.8	1.2	16.0	23.1	21.9	29.8
I start browsing the Internet even when I have other things to do	Yes	42.7	44.3+	38.0-	50.0	41.7	47.1+	49.4+	46.5+	28.6-
	Sometimes	47.2	46.7	48.8	40.4	50.0	46.1	45.4	45.1	51.9+
	No	9.7	8.6-	13.1+	9.6	2.8	6.4-	5.1-	8.0	19.0+
	Ns / Nc	0.3	0.3	0.1	-	5.6	0.4	0.1	0.3	0.5
I sleep less and feel more tired because I spend more time on the Internet?.	Yes	22.1	22.8	20.2	28.8	13.9	26.0+	25.0+	23.7	14.0-
	Sometimes	35.5	36.0	34.5	38.5	25.0	39.3+	36.1	36.0	30.3-
	No	40.9	39.7	43.6	32.7	55.6	33.3-	37.0-	39.0	54.4+
	Ns / Nc	1.5	1.4	1.7	-	5.6	1.4	1.9	1.4	1.3

I usually connect to the Internet during my classes for activities unrelated to the teacher's explanation	Yes	17.1	17.4	16.5	13.5	16.7	19.3+	22.2+	21.5+	6.4-
	Sometimes	37.1	39.6+	31.1-	36.5	25.0	43.4+	41.8+	40.5+	23.0-
	No	43.9	41.3-	49.9+	46.2	55.6	34.8-	35.0-	37.4-	67.3+
	Ns / Nc	2.0	1.7	2.4	3.8	2.8	2.5	1.0	0.6-	3.3+
I feel overwhelmed by the daily management and maintenance of my social networks through the Internet	Yes	9.6	10.5+	7.5-	15.4	2.8	11.9+	10.3	9.8	6.4-
	Sometimes	15.2	15.4	13.9	17.3	25.0	15.4	15.9	16.9	12.9-
	No	72.9	71.8-	76.8+	65.4	63.9	70.8	71.3	71.6	77.9+
	Ns / Nc	2.2	2.3	1.8	1.9	8.3	1.9	2.5	1.7	2.8
Basis		2,893	2,028	777	52	36	839	668	634	752
Average		25.21	24.14	28.29	22.94	22.53	18.44	20.49	23.06	38.78
Deviation		10.54	9.25	13.10	7.92	5.97	0.50	0.50	1.04	12.91

Source: prepared by the authors

Regarding sleep deprivation in favour of connection, no significant differences have been found based on gender, but there are variations by age groups. Once again, the younger cohort reports experiencing this in higher figures (40% of 18 to 19-year-olds). Conversely, more than half of those over 25 deny sleeping less due to spending more time online.

During class, 40% of female students claim to “sometimes” stop paying attention to the teacher’s explanations to browse the Internet, while half of male students deny this. Gender does not seem to determine this activity, contrary to the age factor – students aged 17 to 25, especially those under 19, represent the highest value. As with the previous dysfunctional states, three-quarters of individuals over 25 deny neglecting class to connect to the Internet.

Finally, the findings are decisive when correlating overwhelm from managing and maintaining social networks with gender – women feel more overwhelmed than men. One in five women admits feeling this way, while four out of five men claim they do not. Age also plays an influential role. Among university students aged 18 to 19, one in ten experiences this feeling, and 78% of

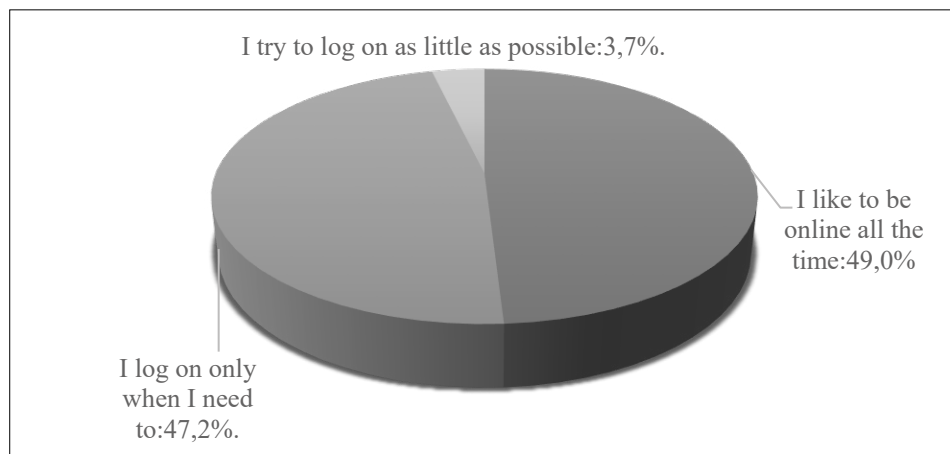
those over 25 do not feel any distress. It is noteworthy that this dysfunction linked to “techno-fatigue” occurs “sometimes” among this group (approximately one in five), as is the case with the dysfunction of stopping activities to be connected.

3.3. Representation in relation to the use of the Internet

The data collected regarding the students’ representation of their relationship with ICTs are as follows: nearly half (49%) admit to enjoying digital connection continuously, while 47.2% claim to connect only when needed (see Figure 1). Henceforth, we will refer to students falling into these two groups as “hyperconnected” and “resigned” students, respectively. In this study, the categories “hyperconnected” and “resigned” are not antagonistic, but a gradient reflecting the self-perception of university students who either enjoy using ICTs or use them only instrumentally. We understand that the widespread perception of the youth being constantly connected (Reig and Vilchez, 2015) has evolved in the last decade and currently does not imply a preference for being always connected.

As shown in Figure 1, a small percentage of respondents (3.7%) try to connect as little as possible. Since this percentage of “disconnected” individuals is so low compared to other user types, this paper does not delve into their description.

Figure 1. Percentage distribution of types of technology users according to self-perception



Source: prepared by the authors

As indicated in Table 3, within the group that enjoys being always connected, no significant differences were found based on gender, although female respondents exhibit higher values than their male counterparts. It is noteworthy that students aged 18 to 19 do not express as much enjoyment in being connected (14.3%) compared to those aged 25 and over (34.2%) who state a preference for constant connectivity.

Among university students who only go online when they need to (resigned), no gender differences are reported either. However, variations exist in terms of age, with a quarter of them being between 20 and 21 years old and a fifth between 18 and 19 years old.

Once again, younger students appear to be resigned and make instrumental use of ICTs compared to those aged 25 and over, who fall below the expected average.

Table 3. Type of technology users, preferences and dysfunctional uses

	Total	I always like it	When I need it	As little as possible
TOTAL (N)	2,893	1,416	1,363	108
Total (%)	100	48.95	47.11	3.73
Gender				
Female	70.1	69.3	71.0	66.7
Male	26.9	28.0	25.6	30.6
Non-binary / other options	1.8	1.7	1.9	1.9
Ns/Nc	1.2	1.0	1.6	0.9
Age (years)				
18-19	16.0	14.3-	17.7+	19.4
20-21	23.1	21.8	24.8+	18.5
22-25	21.9	21.6	21.9	26.9
Over 25	29.8	34.2+	25.8-	22.2
Finding a date or partner				
Prefer to do it in person	76.0	79.7+	71.4-	88.0+
Prefer to do it virtually	2.7	2.3	3.2	1.9
Both ways / no preference	21.2	18.0-	25.5+	10.2-
Ns / Nc	-	-	-	-

Breaking up with a partner				
Prefer to do it in person	90.5	92.1+	88.4-	95,4
Prefer to do it virtually	2.0	1.7	2.2	3.7
Both ways / no preference	7.5	6.2-	9.4+	0.9-
Ns / Nc	-	-	-	-
Meeting a good friend				
Prefer to do it in person	83.7	87.1+	79.5-	90.7+
Prefer to do it virtually	1.1	0.4-	1.8+	0.9
Both ways / no preference	15.3	12.5-	18.8+	8.3-
Ns / Nc	-	-	-	-
Integrating into a new group of friends or colleagues				
Prefer to do it in person	82.4	85.6+	78.6-	89.8+
Prefer to do it virtually	2.9	3.0	3.0	0.9
Both ways / no preference	14.7	11.4-	18.4+	9.3
Ns / Nc	-	-	-	-
I start browsing the Internet even when I have other things to do				
Yes	42.7	33.5-	53.0+	30.6-
Sometimes	47.2	52.5+	41.9-	46.3
No	9.7	13.4+	5.0-	22.2+
Ns / Nc	0.3	0.6	0.1	0.9

I sleep less and feel more tired because I spend more time on the Internet?				
Yes	22.1	17.5-	26.8+	22.2
Sometimes	35.5	34.5	37.5+	23.1-
No	40.9	46.6+	34.2-	50.9+
Ns / Nc	1.5	1.3	1.5	3.7
I usually connect to the Internet during my classes for activities unrelated to the teacher's explanation				
Yes	17.1	12.0-	23.0+	8.3-
Sometimes	37.1	35.7	39.0+	31.5
No	43.9	50.2+	36.0-	59.3+
Ns / Nc	2.0	2.1	1.9	0.9
I feel overwhelmed by the daily management and maintenance of my social networks through the Internet				
Yes	9.6	8.8	9.9	16.7+
Sometimes	15.2	14.1	16.5	13.0
No	72.9	75.1+	71.2-	68.5
Ns / Nc	2.2	2.1	2.4	1.9
Basis	2.893	1.416	1.363	108
Average	25.21	26.13	24.40	23.43
Deviation	10.54	11.56	9.45	8.01

Source: prepared by the authors

Regarding preferences in interpersonal relationships and virtualization, the hyperconnected group shows a strong inclination towards in-person interactions to find a date or partner (79.7%) or end a relationship (92.1%). Additionally, they also prefer this mode for making good friendships (87.1%) or integrating into new groups (85.6%). In contrast, among resigned students, all values are significantly lower when affirming a preference for these relationships in-person (see Table 3). This finding is interesting as it

underscores the hyperconnected individuals' need to interact with their peers in physical spaces, whereas the resigned ones do not crave in-person interactions as much.

In terms of habits and uses of ICTs, half of the resigned student group claim to sometimes browse the Internet even when they have other tasks to carry out, while this only happens sometimes to half of the hyperconnected students. Consistent with these findings, six out of ten in the resigned group state that they sleep less and feel more tired from spending more time online (yes, 28.8%, and sometimes, 37.5%), compared to almost half of the hyperconnected group (46.6%) denying this. The dysfunction of going online during classes for activities unrelated to the teacher's explanation occurs more frequently among six out of ten resigned students (yes, 23%, and sometimes, 39%), while it doesn't happen to half of the hyperconnected group.

Finally, the data vary somewhat when respondents are asked if they feel overwhelmed managing and maintaining their digital social networks daily. The result for the resigned group is below average (seven out of ten), while the hyperconnected student group is above average (three-quarters).

4. Discussion

This study aimed to understand and describe the perception that students at the Complutense University of Madrid (UCM) have regarding their use of ICTs, which has been linked to their interpersonal relationships, moods, and the potential enjoyment they experience while being connected.

Based on the results obtained, it may be asserted that University Complutense of Madrid (UCM) students generally prefer to interact with their peers in-person (O1.1), confirming our first hypothesis (H1) that predicted this preference for offline interactions. In more detail, the findings suggest a digital scenario where gender and age seem to influence the habits and preferences of Complutense students regarding their interpersonal relationships. Women and younger individuals prefer maintaining their personal connections in-person, and as age increases, they begin to consider the virtual option for key moments in their romantic and friendship relationships. These findings align with those of Gómez-Navarro and Martínez-Domínguez (2022), who observed higher digital consumption in male university students compared to female.

Furthermore, two major user types were identified based on the enjoyment experienced when connected (O1.2). Except for the minimal percentage of disconnected students (3.7%), who minimize their digital consumption, there appear to be two main user types among the student body. Firstly, the hyperconnected individuals, those who enjoy being always connected, show no gender differences. Surprisingly, the youngest individuals (18 to 19 years old) are the least enthusiastic about connectivity. This group can be considered "hooked" because they express a liking for hyperconnectivity but prefer in-person interactions for social connections. Additionally, they do not admit or recognize their addiction, as is common among addicted individuals (Marín *et al.*, 2020). One possible interpretation of the link between age and enjoyment of permanent connection could be as follows - older students are in the addiction phase because they adopted digital technologies later in their life, while younger ones have been connected since birth and display clear signs of saturation.

Secondly, it was found that students who claim to connect only when needed represent a significant portion of the surveyed individuals, confirming that the concept of digital resignation is valid for describing a portion of the University Complutense

of Madrid (UCM) student body (H2). Despite the lack of literature on this topic and based on scarce research on resignation in general, the results lead us to understand and define digital resignation as a rational phenomenon occurring when individuals aspiring to reduce their digital consumption face forced or unwanted use of digital media. Among this resigned group, no gender differences were found, but age differences were evident, as 42.5% of those in this category were the youngest individuals (up to 21 years old). The explanation for this concentration of resigned students among the youngest may suggest that they have socialized with ICTs from an early age and quickly incorporated digital social networks. In principle, this group should not exhibit problematic digital use (Villalón, 2016) and might even enjoy daily life without needing to be connected (Chan *et al.*, 2022). However, when it comes to interpersonal relationships, they prefer in-person interactions more than the hyperconnected students, and they confirm that the use of ICTs leads to dysfunctions affecting their daily lives academically and personally.

Thirdly, the findings allowed the identification of potential dysfunctions derived from the use of ICTs by University Complutense of Madrid (UCM) students, which may impact their daily lives (O1.3). Building on previous research, a series of items reflecting dysfunctional consequences of ICTs were identified, including browsing the Internet despite having other tasks to carry, sleeping less and feeling tired due to spending more time on the Internet, going online during classes for activities unrelated to the teacher's explanation, and feeling overwhelmed by the daily management and maintenance of social networks.

Several studies had already demonstrated a link between university youth and hyperconnectivity (Carrasco *et al.*, 2018; Marín *et al.*, 2020), as well as between hyperconnectivity and dysfunctions (Parra *et al.*, 2016). However, this relationship had not been corroborated with digital resignation. Our results confirm this relationship between hyperconnectivity and dysfunctions and also establish one between digital resignation and dysfunctions. Thus, both hyperconnected and resigned students exhibit dysfunctional uses linked to Internet connectivity (H3). The type of user does not seem to be determinant in the presence or absence of digital dysfunctions.

However, gender appears to have some influence. For example, in this study, women are more affected than men in all age ranges, even over 25 years of age – they sometimes browse the Internet despite having other activities to do. The consequences worsen when they replace paying attention to teacher explanations with connecting to the Internet. Once again, this situation affects women more than men and especially younger women. These data align with those of González-Cortés *et al.* (2020), demonstrating that students up to 24 years old have more time for other tasks.

Dysfunctions have a strong impact on the psychological state of students when they report feeling overwhelmed by managing their digital networks, a situation that is more recurrent in women and younger university students but not in those over 25. Regarding vital needs such as sleep, the association seems to be more with age than with gender. While it affects men more than women, it primarily impacts younger individuals.

These findings relate to states corresponding to addictions, i.e., doing something despite it being harmful. The results obtained by Marín *et al.* (2020) indicate that younger university students are techno-addicts. However, contrary to our findings, they suggest that male students exhibit higher techno-addiction than their female counterparts. One possible explanation could be that the women in our study are more willing to forego digital interactions in their interpersonal relationships, but connecting makes them feel more guilty than it does for men.

Given the phenomena of hyperconnectivity, techno-addiction, and digital resignation and their effects on the personal and academic life of students, it appears relevant for universities to adapt the teaching method by granting less space to digital media or, at a minimum, re-conceptualizing the role that ICTs play in university education. Additionally, it is necessary to monitor the digitally resigned group, which, as an emerging dynamic, has not been considered until now, in order to adapt the teaching method to them.

5. Conclusions

This research has provided insights into the relationship that students at the Complutense University of Madrid have with ICTs and how they perceive it. Additionally, it has captured the emerging phenomenon of digital resignation by studying the extent to which students enjoy Internet connectivity. The findings allow us to assert that digital resignation is a valid category to describe university students and reflect a trend towards the convergence of those who are constantly connected (Reig and Vílchez, 2013) and those who avoid connection as much as possible (Casas-Mas *et al.*, 2023).

Apart from age differences, distinctions between “hyperconnected” and “digitally resigned” students lie in the fact that the former idealize face-to-face connections and do not acknowledge dysfunctions like techno-fatigue, stress, or any negative impact on academic performance. On the other hand, the latter is indifferent to the mode of connection but admits to experiencing certain negative aspects of being connected. Therefore, in relation to the virtualisation of daily life, digital resignation implies a certain aversion to constant connection and an effort to adapt to the environment to avoid social exclusion.

While this research and its results shed light on the emerging phenomenon of digital resignation, it has a primary limitation. As a study focused solely on University Complutense of Madrid (UCM) students, it does not allow for findings that are representative of all Spanish university students. Therefore, these findings cannot be generalized to the broader university student population.

Future research on university students and ICT should employ qualitative methods with students from other universities to delve into the preferences of university students for their interpersonal relationships and their dysfunctional states. Additionally, in light of the obtained results, it is recommended to investigate the phenomenon of digital resignation as a new social phenomenon in response to techno-addiction and hyperconnectivity.

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7. Specific contributions from each author

	Name and surname
Conception and design of the work	Belén Casas-Mas and Louis Pierre Philippe Homont
Methodology	Belén Casas-Mas and Louis Pierre Philippe Homont based on the methodology designed by the UCM 940324 research group " <i>Identidades Sociales y Comunicación</i> "
Data collection and analysis	Belén Casas-Mas and Louis Pierre Philippe Homont from the analysis realized by ODEC company through SPSS software
Discussion and conclusions	Belén Casas-Mas and Louis Pierre Philippe Homont
Drafting, formatting, review and approval of versions	Belén Casas-Mas and Louis Pierre Philippe Homont

8. Conflict of interest

The authors declare that there is no conflict of interest contained in this article.

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