



ICT addiction. Teaching perspective from three university centers

Adicción a las TIC. Perspectiva docente desde tres centros universitarios

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Abstract

Within the analyses made with reference to the use and abuse of Information and Communication Technologies, there are several research applied to young people, since they are the group that most concentrates online consumption. However, little has been analyzed about the trends and reflections made in this regard by another population sector, not always different in age, but in their purposes and daily activities: teachers. As part of this work, a study with teachers from three colleges of the University of Guadalajara is shown, who offer their perception of consumption on the web based on the Internet Addiction Test developed by Kimberly Young. The results show, in general, a rational tendency in the use of technology, although there are some frequent indications in the case of the loss of awareness of the time of Internet use, to feel a certain degree of anxiety or nervousness when not connected or to consult social networks or mail before starting priority activities. This work reaffirms the need to deepen studies on the group of teachers of the study centers, since both their personal and professional affectation is of interest, as well as the role that technology plays for them and what message they give to the student communities they serve.

Keywords: Addiction, education, professors, smartphone, technology, university.

Resumen

Entre los análisis realizados con referencia al uso y abuso de las Tecnologías de la Información y la Comunicación existen diversos estudios aplicados a los más jóvenes, por ser el grupo que más concentra el consumo en línea. No obstante, poco se ha analizado sobre las tendencias y reflexiones realizadas al respecto por otro sector poblacional, no siempre diferente en edad, pero sí en sus propósitos y actividades cotidianas: los y las docentes. Como parte de este trabajo, se muestra un estudio hecho a docentes de tres centros universitarios de la Universidad de Guadalajara, quienes ofrecen su percepción sobre el consumo en la web a partir del Test de Uso de Internet elaborado por Kimberly Young. Los resultados muestran, en general, una tendencia racional en la utilización de la tecnología, aunque hay algunos indicios frecuentes en el caso de la pérdida de conciencia del tiempo de uso de internet, a sentir un cierto grado de ansiedad o nervios al no conectarse o así como a consultar redes sociales o el correo antes de iniciar actividades prioritarias. Este trabajo reafirma la necesidad de profundizar en estudios sobre el colectivo de docentes de los centros de estudio, ya que interesa tanto su afectación personal y profesional, como el papel que para ellos juega la tecnología y qué mensaje dan a las comunidades de estudiantes a las que atienden.

Descriptores: Adicción, docencia, educación, tecnología, teléfono, universidad.

1. Introduction

1.1 State of the art

Educational institutions are particularly interesting regarding the Information and Communication Technologies (ICT), on the one hand, by the constant debate on its inclusion in the teaching-learning process, and on the other hand, by the care for the excesses in its use.

The approach to a research topic involving technology and the problem of addictions derived from its excessive use leads us to consider two aspects of analysis; firstly, to know what technology is and, secondly, to determine which are the cases of addiction in history.

Valera *et al.* (2021) state that there is no consensus in the academic literature regarding the use of the term “addiction” to refer to the constant use of the Internet and social networks. Technology originates with the first stone tool that primitive man used (Avalos, 2017); elements such as fire and the spear are considered as technological scopes relevant as inputs insofar as they modify the lifestyle of the first inhabitants. Therefore, to understand the addiction to technology, it is important to know that all scientific innovations since their origin have sought to give our lives meanings and better quality in all aspects, relating innovations to the same scientific and technological advances of human beings.

Technology is indeed an important part in the development of humanity and is maximized for humanity. After the pandemic of COVID-19, the use and permanent access of social networks increased its benefits, especially in education, but at the same time it developed psychosocial disorders in people, such as physical and emotional health problems (Li *et al.*, 2016), and the expansion of violent behaviors, bullying and cyberbullying, as stated by Prieto and Sanchez (2020), who argue that social networks in the lives of children and young people have changed their habits, cultural and educational performance. In most cases, technological changes have

forced teachers to modify the way they teach, from integrating digital knowledge to updating the curriculum and changing teaching strategies. Preciado (2010), says that scientific contributions related to technological advances seek to solve human problems. Thus, it is believed that not only educational models should change in the face of technological advances, but also teaching styles to produce better educational experiences and increase academic performance and reduce apathy and uncontrolled addiction to social networks by students.

1.2 Technology, addiction and education

Undoubtedly, these media have positive aspects to students. López *et al.* (2019) describe that young people have social networks, chats, games and create content, which allows them to interact with other users.

However, López *et al.* (2019) point out that “when this intensive use is not consciously controlled and users are distracted by accessing multiple media simultaneously, there are disadvantages, affecting the performance in other activities” (p. 28). Therefore, educational centers have tried several strategies, such as prohibiting its use in the classroom (especially at the middle and high school level) or during the entire stay at school (elementary level), as well as training teachers in the use of technology in the subject, but the results are scarce or poorly documented.

With these practices, there is a gap between the massive use of technology (especially social networks), particularly by young people, with their fathers, mothers and even teachers, causing a generation gap (Moreno *et al.*, 2017). However, the opportunity to become digitally literate is lost, understanding this concept as “learning to interpret and manage the devices and tools offered by new information and communication technology” (Bawden, 2002, cited in Moreno *et al.*, 2017, p. 13).



However, a latent problem is the abuse of technology (mainly cell phones), which is referred to as “addiction”.

López *et al.* (2019) refer to this issue:

When we talk about the use of ICT in an uncontrolled, anxious, progressive way and with an evident resistance to stop, we can glimpse characteristics associated with substance addictions, specifically the increase of tolerance and withdrawal syndrome... The addition to information and communication technology detailed in previous paragraphs has been recognized by the World Health Organization (WHO) and classified among the behavioral addictions (p. 29).

González Amarilla and Pérez Vargas (2019) cite Brod (1984) who “was the one who introduced the term Technostress, which dates back to the 1980s, considering it as a modern adaptive disease, caused by the lack of ability to deal with new computer technology in a healthy way” (p. 23).

Similarly, they refer to Salanova *et al.* (2007), who states that the trigger elements of stress can be the “technological demands (e.g., mental overload), lack of technological resources (e.g., lack of social support) and lack of personal resources (e.g., lack of specific self-efficacy with technology)” (González Amarilla and Pérez Vargas, 2019, p. 24).

Rojas and Yepes (2022) clarify that there is a difference between dependence and addiction, which is in the “emotional intensity of the person involved” and the abandonment of what is necessary to fulfill daily activities. However, they agree that the uncontrolled use of these devices causes academic, physical and social problems, among others, to the extent that it can become a public health issue (Valencia *et al.*, 2021).

In addition, they cite Watters *et al.* (2013) who say that an addiction can be the compulsive use of a substance, but also of an activity that causes an alteration in the person’s normal functioning. Other authors referred to dependence,

but not to addictive behavior. In either case, it is considered that there is an alteration when the person has difficulties in cognitive flexibility to make decisions; increase in the level of anguish; forgetfulness of activities; memory, concentration or family problems.

The role played by teachers and educational institutions in education for digital citizenship and in the use of ICTs as educational tools has been little studied in this area.

Rojas and Yepes (2022) analyzed the studies in this regard in Latin America during the last ten years and gathered 216 in which most of the topics referring to ICTs were about cyberbullying, fake news and addiction, and only 10% of these focused on adults.

At the same time, Valencia *et al.* (2021) reviewed 116 articles on the impact of networks on young people and how to intervene from an educational perspective. They point out that one of the results found is the relationship between the increase in hours spent on social networks and the increase in academic failure, but also conclude the need for institutions to prepare students in terms of digital skills, and parents also require knowledge about the operation and problems of networks.

One of the problems is the use of these tools. Hernández *et al.* (2018, p. 677) cite Marqués (2004), who:

A triple function: (1) as a facilitating instrument for learning processes, (2) as a tool for information processing and (3) as implicit learning content.

There is undoubtedly a complex situation in which a balance must be sought in terms of pedagogical use, but not abuse. De Lima and Moreira (2019) state that “Education needs to be integrated into cyberculture and must accompany its dynamics of sociocultural renewal and should promote (cyber) inclusion” (p. 13). However, these are not the only elements that condition the changes but should be used



to enhance pedagogical and reflective aspects, according to the same authors.

For Waliño *et al.* (2019), the policy of prohibiting the use of devices in educational institutions may have an adverse effect: that teachers consider if it is an important element in the training of young people. They believe that, above and beyond such practice, what is important is to build “an educational model that allows both teachers and students to develop their own digital citizenship” (p. 322).

The previous authors have also pointed out that there is resistance among teachers and that more studies are needed on whether technology contributes or distracts students from learning. Specialists do not question the potential of the Internet and cell phones or networks but planning on their use is required (López *et al.*, 2019). For this, the authors say that a curricular redesign, teacher training and infrastructure improvement are required.

Valencia *et al.* (2021) question whether teachers have the digital competencies to guide young people in formative actions and potentiate collaboration and participation strategies. Likewise, Waliño *et al.* (2019) consider that teacher training is scarce and that it depends much more on the interest of each individual than on a clear educational policy.

Hernández *et al.* (2018) propose a categorization of the competencies in which teachers should specialize in terms of ICT management, which are: instrumental, aesthetic, curricular, pragmatic, psychological; as a producer, as an evaluator; critical, organizational, research, and communicative capacity, which implies a challenge for the teacher as Maldonado (2018) points out, which consists on focusing on the pedagogical practices of the teacher to enable the development of citizenship, technological and scientific competencies, requiring the analysis of the teaching styles of each teacher, as an actor within the educational process.

1.3 Some theoretical positions related to Internet addictions

The researcher Kimberly Young (1996), a pioneer in several studies on Internet addiction, already warned about the risks of its use and abuse, making recommendations to parents and teachers. Young (1996) created a test to know if the person suffered from this dependence. The World Health Organization (1992) has pointed out that the dependence syndrome presents three or more physical emotional expressions that can be related to the addiction of the Internet, such as compulsion to be connected to a device; lack of control over its use; withdrawal symptoms such as despair, anguish and fear when we are disconnected, and apathy in the participation of other forms of entertainment, games, activities, etc.

Internet dependence disorder is difficult to diagnose, however, it has the same symptoms as addictions such as alcohol, coffee or drugs.

Sánchez Carbonell *et al.* (2008) point out that the Internet and the cell phone require attention in the issue of addictions that could be compared to the reinforcing properties of addictive substances such as feeling part of a group and creating identity, contacting others without the need for face-to-face contact, which creates stress.

Echeburúa and De Corral (2010) emphasized the most important risks of ICT abuse, which are, in addition to addiction, access to inappropriate content, harassment or loss of privacy. Castells (2001) argues that the Internet benefits individualism, changing relationships traditionally structured in the community, family and work, together with interests and affinities where distance is no longer a limit in the relationship.

1.4 Importance of the topic from a teaching perspective

One of the first aspects that makes this topic relevant is that there is a gap in the information regarding the perception of teachers.



Although the focus of attention is on young people, because they are the main group that uses technologies for communication, many teachers are also within the age range of highest ICT use. In this sense, their academic use is unknown, but also their personal use.

The level of Internet use in the country can be seen, for example, in the 18th Study on the Habits of Internet Users in Mexico 2022, by the Mx Internet Association. The latest study shows that the age range in which most Internet users (19.8%) is between 25 and 34 years old, followed (17.2%) by those between 35 and 44 years old, i.e., age groups that include many professionals.

It is complex to determine at universities the number of teachers and their ages given the diversity of institutions, however, it is possible to give an overview regarding basic education teachers. In this regard, INEGI (2020) reported that the average age of teachers is 40 years, and the range oscillates between 35 and 44 years (Magaña, 2021).

García *et al.* (2019) warn that teachers are aware of the activities of students in the virtual environment, but do not have the tools to manage these situations. Similarly, the same authors (2019, p. 45) cite Gabarda *et al.* (2017) and Eden *et al.* (2012) who:

Teachers, aware of their insufficient digital knowledge, demand more information and training, the development of protocols for action in schools and the activation of tools to help them detect problems related to the misuse of new technologies.

Reference is even made to a “position of inferiority experienced by teachers as digital immigrants, compared to those already born in the Internet era” (p. 45).

González Amarilla and Pérez Vargas (2019,) consider that:

Technostress can be present at any time of the teaching task either by the lack of use or

excessive use of technology, therefore it is convenient to know about it to consider the necessary preventive measures at the institutional level focused on the human factor responsible for providing quality education to students. (p. 33).

Álvarez Flores (2021) believes that “the advantages of the Internet due to its interactive nature, ease of access, convenience of use and immediacy can be transformed into disadvantages by presenting individuals possible negative effects by posing various threats as a result of inappropriate or uncontrolled use” (p. 34). Young (1999) anticipated this aspect when pointing out that the use of the Internet did not provide improvements in student performance, mainly because of the disorganized nature of the information on the web and not always linked to school curricula and textbooks and, in the workplace, it may represent a reduction in the effectiveness of performance. These factors are also relevant to consider when analyzing academics in terms of their time and type of use on the Internet.

2. Methodology

In order to obtain the results, a quantitative approach and a descriptive scope were used to determine the characteristics of a group of academics and their Internet use behaviors. This first approach is considered valuable since most of the analyses regarding Internet use have focused on students.

A non-probabilistic purposive sample of ten professors belonging to two university centers of the University of Guadalajara (Mexico) was taken: from the Economic Administrative and Northern Sciences and 11 from the Social Sciences and Humanities.

Purposive sampling allows to study populations with a high degree of variability (Otzen and Monterola, 2017). This is the situation that can be found in spaces as heterogeneous as university centers, where the teaching staff is diverse.



Thus, the idea was to have a variety of academics, from young professors to those with lots of years of experience; different academic degrees (undergraduate and graduate) and different formations as professionals.

The instrument selected was the Internet Use Test, developed by Kimberly Young, which “evaluates the extent to which a subject relates to the computer, classifying addictive behavior” and has been validated in more than 20 countries around the world (Álvarez Portela and Fernández Castillo, 2018, p. 175). From this first study it will be possible to conduct other types of research with different approaches and, above all, with a larger population, based on the data collected with the intention of diagnosing more broadly the behaviors of professors regarding Internet, the type of use they make of online tools and the

degree of addiction in a community as broad as that of the University of Guadalajara.

3. Discussion of the results

According to the diagnosis carried out as a result of the instrument applied, 54.8% of the respondents were women and 45.2% were men. The age of most of the professors was from 36-45 years old, representing 38.7%; followed by the group from 26-35 years old, representing 25.8%; followed by those older than 55 years old, representing 19%; and concluding with those from 26-35 years, representing 16.1%. Most of the professors have a master’s degree, with 48.4%, while 35.5% of those surveyed have a PhD, and the rest, 16.1%, have a bachelor’s degree.

Table 1

How often do you realize that you spend more time on the Internet than you should?

Frequency	Percentage
Never	3.2
Rarely	9.7
Occasionally	29
Frequently	16.1
Very often	25.8
Always	16.1

The interaction that professors stated, adding the frequencies “Always” and “Very often”, reach 41.9%, i.e., slightly more than 4 out of 10 teachers.

On the other hand, the results indicating that professors neglect their academic activities because they are on the Internet show that 41.9% do it rarely, while 16% say they do it occasionally. This shows that, in general, academics do not neglect their work, although they may tend to be connected with some frequency.

When asked how often they make friends online, 45% answered “Never”, while 35.5%

“Rarely”; this indicates a distrust in establishing friendships and coexistence through this channel, perhaps as a response to the awareness and experience of the dangers of interacting through the Internet, especially with strangers.

In relation to the performance of professional activity and the possible harm caused by the abuse in the use of the Internet, 58.1% of professors state that they have never experienced this situation; if adding to this percentage those who rarely suffer from it the figure reaches 80.7%. Only 6.5% consider that it happens frequently.



Table 2

How often do you check your social networks or email before starting other priority activities?

Frequency	Percentage
Never	0
Rarely	12,9
Occasionally	32,3
Frequently	25,8
Very often	16,1
Always	12,9

As shown in the table, attention to priority activities is often neglected due to the distraction generated by e-mail or social networks. The highest percentage 32.3% check their mail and it is noteworthy that 29% check it very often and always, which is a habit in almost one in three professors. Notwithstanding the above, they consider that their work productivity is not affected by the Internet, so they consider that there is no impact in this regard.

Professors do not point out a connection between the daily life problems and the need to connect to the Internet. 54.8% indicated that there is never an escape from difficulties thanks to online connection. Regarding the responses of those who do report a virtual escape from difficulties, two people indicated that it happens very often and one frequently. At the same time, for the majority there is no plan of what they will do the next time they go online, 35.5% indicating never and 25.8% rarely. The answers "Very often" and "Always" are only expressed by two academics. Although professors do not consider the Internet to be an essential element for daily life either, in the sense that they consider that it would be boring or empty not to have this tool, most of them thought that the Internet has made life more pleasant.

In the analytical approach as to whether it bothers them when other people interrupt them while they are on the Internet, 55% indicated that it never happens, mainly because of the high degree of concentration and effort involved in performing activities in front of a

computer focused on what they are doing and disconnecting from what is happening around them. The results suggest that when people are on the Internet, they are usually capable of voluntarily directing their attention to the effort and concentration on the activity being carried out, so they tend to ignore the distracters that prevent them from focusing their interest on the cyberspace.

As for the frequency on the use of Internet and sleeping problems, the highest percentage of responses (32.3%) indicates that it rarely causes this effect, maybe because people do not use devices at bedtime or simply their sleep discipline forces them to suspend the use of any device that enables connection to the network during bedtime. On the other hand, 25.8% say that occasionally spending time on the Internet reduce their sleeping hours; it is also found that 22.6% have never suffered the loss of sleeping hours; 12.9% indicate that it happens frequently and 6.5% say that it happens very often.

Although most of the results indicate that there is rarely a perception in this sense, there is a physical wear and tear when checking social networks, chatting or watching videos during sleeping hours, since rest times are shortened to the point of technological insomnia. Knowing how to identify whether the exacerbated use of time spent on the Internet and how it is directly impacting the physical and mental health of people will help to control and regulate a balance between connectivity times and breaks from the use of electronic devices.



There is the fact among professors that the dynamics of online work with their students generate a lack of time to use it in their personal activities with their families, which is adapting to the evolution of life routines and even to a digital culture that is increasing every day, especially with the new generations and forces them to be in more contact with the internet, knowing that they have a more active and dynamic participa-

tion with their students through the Internet and social networks, in which they accept the support it provides in academic activities and facilitates the organization, delivery and evaluation of activities, thus getting to know new educational proposals and keeping a record of their activities, accepting the power of the Internet in the academy and in the daily social interactions of the university.

Table 3

Have you ever thought about spending less time on the Internet and not been able to do it successfully?

Frequency	Percentage
Never	29
Rarely	25,8
Occasionally	22,6
Frequently	19,4
Very often	0
Always	3,2

As to whether professors intend to spend less time on the Internet (Table 3), 29% have not been able to do so because of the support it provides; there is no perception on the part of those participating in the study that Internet use is a problematic situation.

Regarding whether they prefer to spend more time on the Internet than on socializing with friends, 45.2% consider that they have never done so, since the awareness of the use and applications of the Internet as a resource for professional and social help still prevails, which cannot displace the value of socialization as a communication tool. Among the responses, 22.6% say that they rarely prefer to spend more time connected on the Internet than to socializing with friends, 16.1% said occasionally, 9.7% said very often, and 6.5% said frequently. The results show that people prefer human socialization to computer solitude, not without mentioning that for those who said that Internet is a priority over people, there may be a decrease in communication, in addition to the existence of depressive, sedentary and solitary situations.

Finally, professors were asked if they had felt anxious, nervous or depressed when they were unable to connect on the Internet, the results showed that most of them did not perceive it as such, which may be because they are familiar with their activities, times and spaces in which they know Internet as an effective tool for their purposes. This security is due to the mastery of technological tools and awareness of the correct use of the Internet. However, there is a contradiction with the answers provided in previous questions that show the professor's obsession and feelings of anguish when he/she is not connected to social networks for a certain period of time.

4. Conclusions

It is important to carry out studies where Internet addiction is the focus of scientific analysis. Having said this, the results show that more and more people see their forms of socialization and their physical and mental health altered due to excessive use of the Internet.



Although there is no alarming data among the subjects studied, there are some results that suggest attention to professors as Internet users, such as the loss of awareness of the time spent on the Internet or the distraction of priorities by consulting the web.

Likewise, it is found that due to the excessive use of technology it is possible that many professors with connectivity addiction problems have some difficulty when socializing in their work and family environments, also finding that the professors who spend more time connected will be those who may be affected with conditions such as stress, anxiety, lack of effectiveness and interest in daily activities, with the same problems of communication and mental health.

The results show a brief social image insofar as they allow to interpret that the problems derived from addiction to Internet connectivity can be linked to the social dynamics of users in such a way that the more time connected on the Internet, the more the addictive risk factor. As analyzed by Valencia *et al.* (2021), it is essential to create training models so that not only students but also teachers master different aspects of technology (search, evaluation, collaboration and protection, among others).

It is also concluded that being Internet a tool that facilitates thousands of activities in the professional or social environment of professors' daily lives, it is important to recognize that the excessive time that professors spend in their connectivity makes them escape from a social reality where the virtual world acquires more meaning. Even though there is research on Internet addiction, we consider that the added value of this study is to concentrate the research interest in professors, especially at the University of Guadalajara, who are aware of the great value of technology as a support in their teaching and learning activities in order to ensure meaningful learning according to the educational needs of their student community.

It will be necessary in future research to see if it is feasible to conduct similar studies

in other university centers of the University of Guadalajara with the aim of knowing their institutional realities in terms of Internet addiction not only in their teachers, but also considering students in the short term, in order to determine the prevalence of addiction to social networks and prevent it in a timely way. As Cabero *et al.* (2019) point out, it cannot be denied that ICT abuse has negative consequences, so it is essential to conduct educational public policies that regulate the use and abuse of technology and prevent harmful effects to the detriment of users, which could be significant for teaching practice in cyberculture, allowing to effectively enhance participatory and collaborative strategies inside and outside the classroom.

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