

DISPERSED CONCENTRATION AND NOMOPHOBIA IN HIGHER EDUCATION



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ABSTRACT

The excessive use of Digital Information and Communication Technologies (DICT) has caused negative impacts on daily relationships at the individual and social levels, directly interfering with mental health and aggravating the emergence of new psychological disorders, especially after the COVID 19 pandemic. The incessant search for sensory and emotional stimuli from the excessive use of these technologies contributed to the development of nomophobia – an anxiety disorder classified as phobic-anxiety disorder related to the fear of being without technologies, especially without access to the internet and social networks. To understand the consequences of this new reality, the present qualitative research sought to analyze how nomophobia and concentrated distraction affect teaching and learning in Higher Education, generating new didactic-pedagogical challenges for educators. The collection of empirical data was carried out from the application of a questionnaire, with open and closed questions to all students of the State University of the Tocantina Region of Maranhão (UEMASUL). 290 responses were obtained. The results indicate that students' attention is constantly diverted during classes due to the indiscriminate use of mobile devices, compromising learning and demanding the development of diversified methodological teaching strategies to minimize the effects in terms of concentrated distraction. Thus, the excessive use of DICT during classes significantly interferes with academic training, compromising the quality and educational emancipation of future professionals, which requires further investigations to identify possible actions regarding the implementation of institutional regulatory frameworks that can mitigate the negative consequences of this context.

Keywords: Higher Education, Nomophobia, Concentrated Distraction.

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INTRODUCTION

The excessive use of Digital Information and Communication Technologies (DICT) has generated negative impacts on people's lives, affecting their social relationships, productivity and health. Levels of psychological illness have increased in recent post-pandemic years, where the incessant search for sensory and emotional sensations is constantly directed to technological devices, especially cell phones, giving them prominence in various situations of daily life, causing several problems in the most different sectors of collective social life (Serafim, et. al, 2021).

Until 2008, there was still no term that categorized the dependence and/or pathological relationship caused by the frequent use of DICT, especially cell phones, computers and other mechanisms that enable access to the internet, more specifically, to social networks (King; Nardi; Cardoso, 2015). From this need, the term nomophobia was created, original from the expression *no-mobile* (without cell phone) together with *fobis* (phobia/fear), which represents the discomfort, anguish, anxiety and/or fear that the feeling of being without the cell phone. Nomophobia can be framed as an anxiety disorder classified as phobic-anxiety disorder and, since 2018, the World Health Organization (WHO) has recognized digital addiction as a disorder that harmfully affects the brain's reward system and desensitizes the nervous system, due to the release of large amounts of dopamine - a neurotransmitter associated with the feeling of well-being.

However, as Machado and Eisenberg (2023) point out, the term nomophobia "expanded to other technologies, and it was found" that its symptoms "were not only manifested in the impossibility of using the cell phone, but also in the use of the computer or the lack of internet connection" (p. 4). This irrational fear and the constant bombardment of information provoke sensations that resemble withdrawal crises, in such a way that what was a simple attachment in the present time, becomes an addiction, gradually expanding among all sectors of social life.

Pathological dependence manifests itself in individuals who, when they lose their object of dependence, in this case, a cell phone or computer, in order to communicate, end up presenting symptoms and emotional and behavioral changes. The symptoms most frequently observed in these situations are: anguish, anxiety, nervousness, tremors, sweating, among others, which are related to the impossibility of immediate use of the cell phone or computer and are known as nomophobic symptoms (Maziero; Oliveira, 2016, p. 2).

As Marshall McLuhan had already pointed out in his work *The Media as an Extension of Man*, published in 1964, the media figure as an extension of the individual,

being used as a kind of life manager, in such a way that even the most resistant individuals to technological advances are influenced by the need for attachment or dependence on their use. If we consider the dependence on mobile devices today, we can say that McLuhan's analysis has proven to be increasingly pertinent and current.

In 1947, Max Horkheimer and Theodor W. Adorno, in the work *Dialectics of Enlightenment*, highlighted how technical and instrumental rationality led to increased domination over nature and people, and how this resulted in an increasingly homogenized, bureaucratized, and alienated society. For them, mass culture, through what they called the cultural industry², at the same time that it gave rise to mechanisms of facilitation and democratization in the location and use of information, also constitutes a dangerous instrument of alienation, with a view to *semi-formation*, adulterating "sensory life" and making all words become a hallucinatory system. in such a way that "education in the present is semi-formation" (Maar, 2003, p. 469). Semi-formation would be a one-dimensional, limited and circumscribed formation, which became the "dominant form of consciousness", becoming a "socialized semi-formation", which hypostasizes "limited knowledge as truth", in a close relationship with instrumental reason resulting from the cultural industry (Adorno; Horkheimer, 1985, p. 182).

Thus, through the intertwining between the concept of technical rationality and social reality, Adorno and Horkheimer (1985) demonstrated how a reification typical of monopoly capitalism is produced industrially, whose maximum objective is the ideological maintenance of domination. This reification would be the result of the co-naturality between myth and enlightenment which, according to them, have a common origin, and for this reason, they are clothed with a curious equivalence: enlightenment, which should aim to enlighten society by dissolving existing myths and replacing imagination with knowledge, becomes a true mechanism of social coercion:

The myth becomes clarification [...] The price which men pay for the increase of their power is the alienation of that over which they exercise power. Enlightenment behaves as the dictator behaves with men. The latter knows them to the extent that they can be manipulated [...] In this metamorphosis, the essence of things reveals itself as always the same, as a substrate of domination (Adorno; Horkheimer, 1985, p. 24).

² The term cultural industry was introduced in the work *Dialectics of Enlightenment* to indicate how the process of industrialization of culture and the commercial imperatives that drive this system have the same characteristics as other mass-produced products, namely: transformation into merchandise, standardization and massification, used in favor of the ideological legitimation of capitalist societies (Cohn, 1986).

Taking this analysis as a reference, we understand that today, despite the advance of enlightenment provided by the globalization of the media, the myth, represented by the distraction resulting from the excess of audiovisual stimuli of social networks, exerts a dangerous influence on modern society, even if in a disguised way, in such a way that mass culture, More specifically, social networks continue to favor the propagation of myth as enlightenment, involving subjects with momentary illusions and a semi-formation resulting from fake news and a non-existent reality, which keep them alienated from themselves and the world around them.

Thus, even though in the period in which these authors carried out such analyses the means of communication did not present such influences, it is undeniable that such propositions help us to understand the harmful consequences of the advance of social networks and their consequences for the process of subjectivation. The false sense of freedom and autonomy denounced by these authors decades ago is increasingly evident, in such a way that the users of these technologies remain increasingly hostages of distorted and alienating sensations.

Nowadays we are much more accustomed to the fascination that such devices exert, to the point that currently it is possible to identify the dissemination of a kind of enchantment by technological authority. But this charm needs to be read as the fetish that it truly is, that is, the more people become commodities that can be exchanged indiscriminately, the more they seek to rationalize this feeling of insignificance through identification with the strength and power that machines socially impose (Zuin, 2017, p. 131).

To understand the advancement of these technologies today, the German researcher Christoph Türcke, produced in 2010 the work entitled *Excited Society: Philosophy of Sensation*, in which he states that DICT has contributed greatly to the advance of the inattention of its users, resulting in the phenomenon that he called *concentrated* distraction, typical of total audiovisual societies, where audiovisual stimuli quickly imprison the attention of individuals and soon dissipate, causing the understanding of the message to remain fragmented, resulting in a dispersed and superficial attention that hinders the ability to concentrate for a long time and to reflect critically on what one reads or watches. The large number of audiovisual stimuli in this context compromises the ability to understand, gradually destroying the ability to concentrate.

Recent research (García et al., 2019; King; Nardi; Cardoso, 2014; Morilla et al., 2020; Teixeira; Silva; Sousa, 2019) turn to understanding the consequences of the excessive use of DICT and its relationship with the emergence of new emotional disorders

such as nomophobia, in order to understand how such a disorder results from the release of dopamine in the brain, giving the feeling of relief and momentary pleasure, contributing to intensify the symptoms of dependence. This is because, since dopamine is a neurotransmitter directly related to pleasure and reward, the excessive use of DICT can harmfully affect the brain's reward system. For this reason, Dunckley (2015) states that time in front of screens desensitizes the nervous system. Games and social networks can lead to an "addiction" to electronic devices, releasing large amounts of dopamine, a neurotransmitter associated with the feeling of well-being. The sensations resulting from this habit are presented to the user as a positive reward, due to the feeling of autonomy and freedom generated by the false sense of choosing content, constantly reinforced by the participation of users in this digital universe in the form of comments, interactions and likes. This reality has generated significant changes in the behavior of individuals, compromising their activities at the individual and social levels, as they create a dependence on the need to be permanently connected to the information conveyed by these technologies.

The uncontrolled use of DICT has permeated everyday life, so that

[...] The inappropriate and inconvenient use of mobile devices [becomes] an obsession, a compulsive conduct and even [the loss of] control of their handling, [which] results in nomophobia disorder, which encourages social isolation if one cannot disconnect from this virtuality. In withdrawal from mobile devices, the symptoms resemble those of drug withdrawal syndrome [...] For these reasons, nomophobia can be considered a disorder of the modern world, derived from the advances produced by virtual communication and technological developments (Bianchessi, 2020, p. 22).

If we consider the consequences of this new phenomenon for formal education environments, such as schools and universities, it is possible to say that we are in the midst of a new reality that imposes itself and about which we have no dimension of the real consequences.

In Higher Education, such disorders directly compromise the quality of the training of those who will be the future professionals of the labor market. The compulsive use of DICT at this stage of training, especially cell phones during classes, generates serious problems for learning, making nomophobia among university students an adversity that needs to be urgently debated and addressed.

How to deal with the compulsive and non-pedagogical use of mobile devices in the classroom? What are the consequences of concentrated distraction for student

performance in Higher Education? What changes have been caused in the pedagogical relationship due to this context?

To answer such questions, the present research sought to understand the consequences in terms of the impairment of concentration and academic performance in Higher Education, due to the exacerbated use of mobile devices during classes.

The general objective was to understand the consequences in terms of the impairment of concentration and academic performance in Higher Education, due to the exacerbated use of mobile devices during classes. And the specific objectives were: to identify the reasons that lead students to use cell phones during classes; understand the consequences of deprivation of cell phone use during classes; to identify changes in the teacher-student-knowledge relationship, due to the use of cell phones during classes, without any pedagogical purpose.

MATERIALS AND METHODS

Initially, a bibliographic research was carried out on the productions related to the theme in three databases with a view to studying and deepening the subject: Scielo (Scientific Electronic Library Online), EduCapes (Coordination Foundation for the Improvement of Higher Education Personnel) and Google Scholar.

It was found that the number of productions related to the theme of concentrated distraction is lower when compared to the theme of nomophobia. However, in all the productions in which the theme of concentrated distraction was discussed, it appears linked to the excess of visual stimuli resulting from the exacerbated use of technological devices, including the cell phone, which evidences a close relationship between the theme of concentrated distraction and the theme of nomophobia.

Table 1. Quantity of productions related to the theme.

Database	Thermos of search	Quantitative
Scielo	Nomophobia	4 productions
	Concentrated distraction	2 productions
EduCapes	Nomophobia	25 productions
	Concentrated distraction	3 productions
Google Scholar	Nomophobia	3,670 productions
	Concentrated distraction	158 productions

Source: Original survey data.

From the identified productions, a selection of works produced only by Brazilian researchers was carried out, whose productions were organized chronologically, in order to identify the evolution of research on this theme. 9 productions related to the area of education were identified, 6 of which were directly related to nomophobia in Higher Education, as highlighted in bold in Table 2:

Table 2. Productions selected for analysis.

TITLE	AUTHORS	YEAR
Nomophobia: Gadget addiction can go much further!	Camilo Monteiro Lourenço Jairo Hélio Júnior Hugo Ribeiro Zanetti Edmar Lacerda Mendes	2015
Nomophobia: dependence on the computer, internet, social networks? Cell phone dependence? The impact of new technologies on the daily lives of individuals.	Anna Lucia Spear King Antônio Egídio Nardi Adriana Cardoso	2015
Nomophobia: a syndrome in the twentieth century. XXI	Luana de Andrade Pinheiro Borges Thelma Pignataro	2016
Nomophobia: a literature review	Mari Bela Maziero Lisandra Antunes de Oliveira	2016
Evaluation of the usability of mobile phones in the Brazilian market: do gender, age, education and family income have any influence?	Fernando Henrique Oliveira de Aguiar Alcides Barrichello Rogério Scabim Morano Douglas Luvizutto da Silva Gustavo Mascarenhas de Oliveira	2016
Where's my cell phone? An analysis of nomophobia in the organizational environment	Thyciane Santos Oliveira Laís Karla da Silva Barreto	2017
Smartphone addiction: a study of nomophobia in the training of future managers	Thyciane Santos Oliveira	2018
Nomophobia: the existential void	Cathiel Ninfa Moneta Souza Manuella Renata Santos da Cunha	2018
Nomophobia in the school environment: the student's digital life	Cleber Bianchessi	2019
Nomophobia: the psychic impacts of the abusive use of digital technologies on young university students	Irenides Teixeira Paula Corrêa da Silva Sonielson Luciano de Sousa Valdirene Cássia da Silva	2019
Beware of nomophobia: the digital addiction syndrome in the interference of smartphone addiction in the organizational environment	Stefani da Silva Santos	2019
Nomophobia: an integrative review of the disorder of modernity	Jéssica Leitão Morilla Gabriella Cassago Vieira Carolina Nishiwaki Dantas Regina Márcia Cassago Sílvia Helena Modenesi Pucci Débora Rita Gobbi	2020
Nomophobia and the technological dependence of the student	Cleber Bianchessi	2020
Does nomophobia, phone use and social networks harm the learning of university students?	Leonardo Moreira Rabelo Krislayne Veras Alexandre Gabriela Meira de Moura Rodrigues	2020

My cell phone, my addiction: a study on smartphone addiction among university students in public institutions of higher education in Brazil	Rafael Machado Amorim	2020
Impact of smartphone use on quality of life and risk for nomophobia	Helena Costa Santos' dog, Bruna da Silva Cruz	2020
Nomophobia and pandemic: a study on online behavior in Brazil	Dayana Boechat De Marins	2021
Nomophobia and sense of coherence: an emerging problem in higher education students	Maria Isabel Gonçalves da Cunha	2021
Analysis of smartphone use addiction in comparison to pain, sleep, anxiety and depression in university students	Vanessa Cristina Godoi de Paula Ana Carolina das Neves Giani Alves de Oliveira	2022
A Study on Nomophobia and Academic Self-Efficacy Beliefs in College Students	Débora Vieira Machado Zena Eisenberg	2023
Nomophobia: an emerging problem of the modern world	Maria Luiza Hajjar Cunha Ricardo Lima Pedrosa Luis Eduardo Braz de Moraes Alves Renata Gonçalves Lopes	2023
Nomophobia: the impacts of the abusive use of digital technologies on mental and collective health	Iara da Silva Braga Maria Rosa Pereira Soares Samuel Reis e Silva	2023

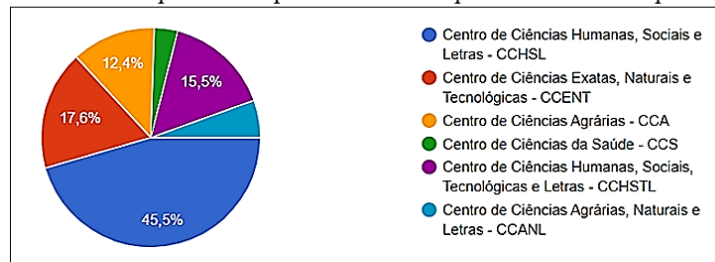
Source: Original survey data.

For the collection of empirical data, a questionnaire was prepared from Google Forms, with open and closed questions, sent by the Integrated System for the Management of Academic Activities (SIGAA) to all academics from the three campuses of the State University of the Tocantina Region of Maranhão (UEMASUL), located in the cities of Imperatriz, Açailândia and Estreito. The questionnaire was subdivided into three sections: the first, with questions about compulsive behavior in relation to cell phone use; the second, about the impairment of social relationships due to the excessive use of cell phones and; the third, with questions about the impacts of this use in relation to academic performance.

Before having access to the questions, the participants had access to the Free and Informed Consent Form (ICF), in which the advantages and risks of the research were presented, mainly indicating the guarantee of anonymity and the freedom to withdraw from participation at any time.

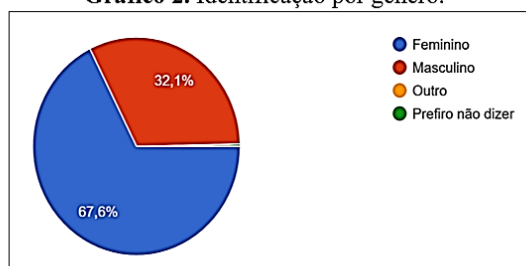
A total of 290 students participated in the research, mostly from the Center for Human, Social Sciences and Letters (CCHSL), located in Imperatriz, aged between 17 and 22 years and female, as shown in Graphs 1, 2 and 3:

Gráfico 1. A qual Centro pertence o Curso que o acadêmico frequenta.



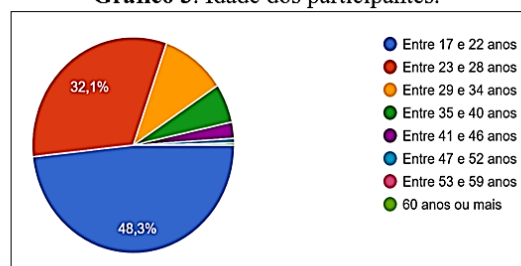
Fonte: Dados originais da pesquisa.

Gráfico 2. Identificação por gênero.



Fonte: Dados originais da pesquisa.

Gráfico 3. Idade dos participantes.



Fonte: Dados originais da Pesquisa.

The identification of the profile of the participants is in line with data from the Brazilian Institute of Geography and Statistics (IBGE) from 2021, when it states that the number of women using cell phones is higher when compared to men: 85.6% versus 83.7% respectively, as confirmed in Graph 2. The age group of the public that uses cell phones is higher among young people aged 17 to 22 years, compared to older people, as also confirmed by Graph 3. The time of use of young adults is higher, with a percentage of 94.2% among individuals aged 22 to 24 years, compared to 57.5% of elderly people aged 60 years and over.

RESULTS AND DISCUSSIONS

The exacerbated use of DICT, especially of mobile devices such as cell phones, is a recurrent concern due to the consequences for the quality of social life in various sectors, especially in the academic environment, which requires students to concentrate and intensify the quality of professional training. In these environments, nomophobia is usually linked to the students' feeling of not feeling able to carry out activities and studies without the mandatory support of DICT. In these situations, it is very common to come across students who are excessively nervous, anxious and/or insecure, which seriously compromises their academic performance.

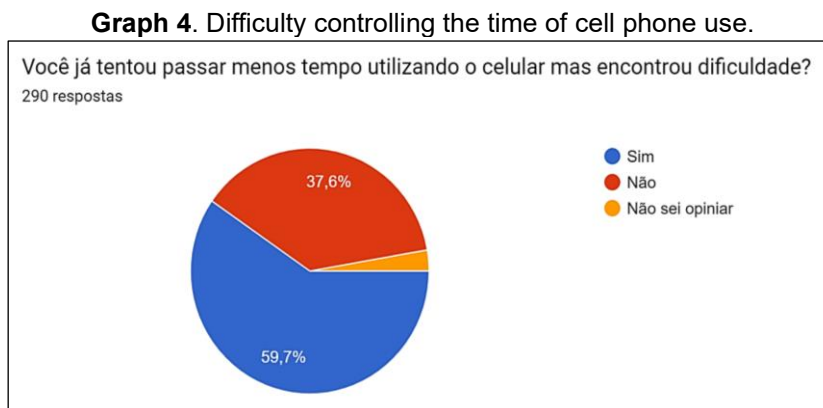
Sometimes, students become dependent on the use of digital technologies as a support for learning and doubt their own ability, such as: the student who does not feel able to make a presentation without using the *slide* as a support; when some unforeseen event happens and the use of the computer is not possible and the student cannot find other solutions to continue the task because he believes that it would only be possible with technology, or when, for some reason, they cannot use their cell phone, computer or *tablet* to take notes and have difficulty making them by hand (Machado; Eisenberg, 2023, p.3).

It is recurrent to hear from educators statements related to the identification of students' difficulties in this sense, especially when they are instructed to produce texts or some other handwritten activity, since students affirm that they feel a lot of difficulty to carry out such activities without the support of some technology.

But, after all, what are the most recurrent characteristics related to nomophobia? According to Maziero and Oliveira (2016), the main characteristics linked to this disorder are:

[...] low self-esteem, inappropriate social behaviors, fear of relating, social anxiety, low self-confidence, shyness, low proactivity, social isolation, low coping skills, low sense of self-efficacy, in addition to impoverished affective and social relationships (p. 77).

In order to identify such characteristics among students, in order to assess to what extent they recognize in their behaviors signs of this dependence or not, we elaborated questions about the occurrence of these behaviors at the individual and social level. When asked if they had already noticed that the use of this device was done for a longer period of time than initially planned, 59.7% of the participants answered affirmatively, as shown in Graph 4:



Source: Original survey data.

The result shows that most students recognize that they have difficulty controlling the time they use their cell phones, which shows signs of this dependence.

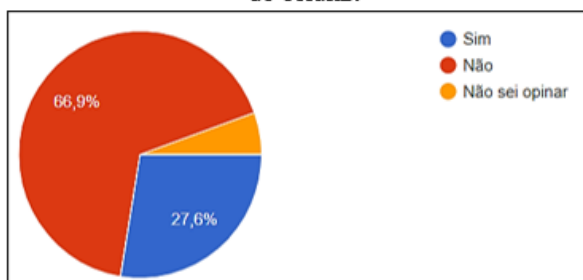
When asked about the commitment to day-to-day activities, due to the uncontrolled use of the cell phone, 77.2% stated that they continue to use the cell phone even when they feel very tired; 67.9% use their cell phones during meals; 63.4% use their cell phones whenever they go to the bathroom; 61.4% recognize that they feel pain and/or discomfort in the back and/or discomfort in the eyes, due to excessive use of the cell phone; 56.6% stated that the cell phone comes as the first thought when waking up in the morning; 56.2% say they have already spent more than they intended due to the uncontrolled use of their cell phones; 54.8% recognize that they feel the need to constantly check their messages or access social networks; 47.6% recognize that they have slept less than four hours a night due to uncontrolled cell phone use; 46.2% say that when they wake up during the night they resort to their cell phones and; 42.4% stated that this decrease in sleep time impaired their performance during the day.

Such evidence indicates that a significant number of students already show signs of impairment in the quality of activities related to their daily lives, since some activities are mandatorily performed with the company of cell phones.

As Maziero and Oliveira (2016) point out, "pathological dependence manifests itself in individuals who, when they lose their object of dependence, in this case, a cell phone or computer, in order to communicate, end up presenting symptoms and emotional and behavioral changes" (p.2).

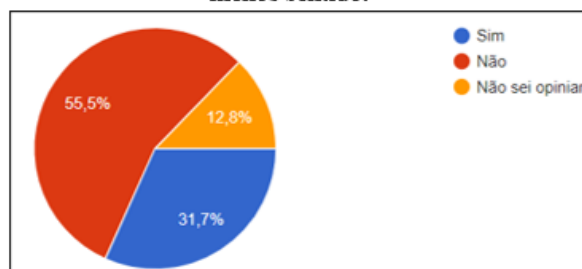
When asked about the impairment of interpersonal relationships due to the exacerbated use of cell phones, most students answered negatively, indicating that this pathology has not yet been observed in this sense, as shown in Graphs 5, 6, 7, and 8:

Gráfico 5. Diminuição da interação social e o uso do celular.



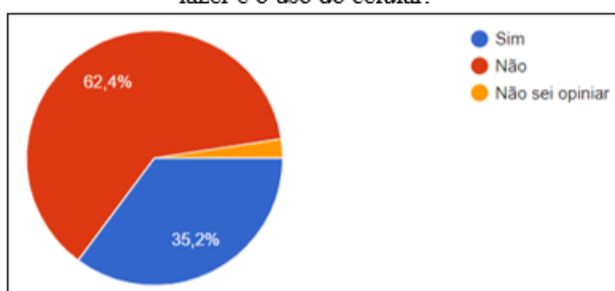
Fonte: Dados originais da pesquisa.

Gráfico 6. Sensação de que a vida sem o celular teria menos sentido.



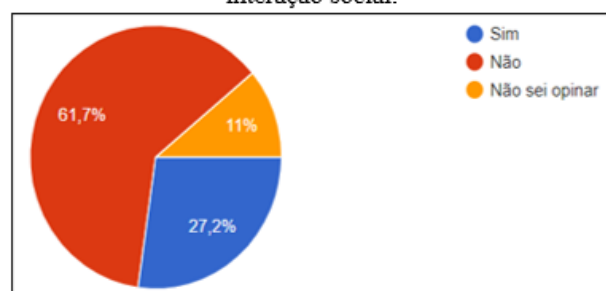
Fonte: Dados originais da pesquisa.

Gráfico 7. Relação entre diminuição das atividades de lazer e o uso do celular.



Fonte: Dados originais da pesquisa.

Gráfico 8. Preferência pelo uso do celular à interação social.



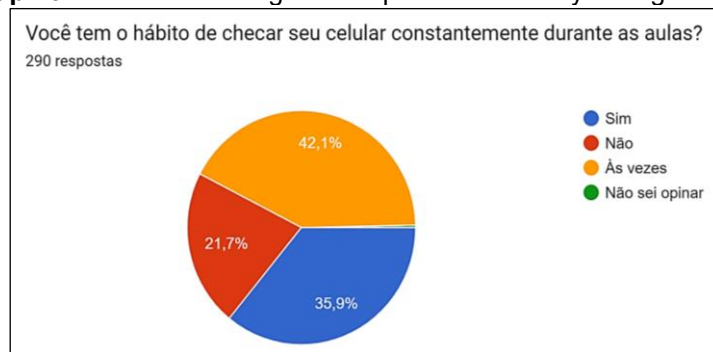
Fonte: Dados originais da pesquisa.

However, although most did not answer affirmatively about the recognition of such symptoms, the data show that a considerable number of students already identify this dependence, which represents an important alert on this issue, especially for educators.

Such evidence reveals the direct influences of the movement of spectacularization of social networks in everyday life, resulting in a dangerous dispersion that intensifies "to the extent that such stimuli become present in all areas of life", including private ones (Türcke, 2010, p. 276). In this sense, we can infer that direct influences of the cultural industry are identified in the process of subjectivation of the subjects today, which is in line with the propositions of Adorno and Horkheimer (1985) about the influences of the cultural industry, when they state that the apparent democratic aspect of this system, in the sense of giving "voice and vote to the people", is nothing more than a powerful ideological mechanism, whose purpose is the constitution of a mass communication for the masses. Such a system has as its purpose the inhibition of reflexivity about the human existential condition, with the "mission of unaccustoming them to subjectivity" (p. 135), which makes the public's attitude become "a part of the system, not its excuse" (p. 115). In this way, the cultural industry concentrates the forms of social communication for a single objective: to form consciousness to integrate the subjects as mere consumers of its commercial patterns.

When asked if they had already noticed that they had developed the habit of constantly checking their cell phones during classes, 35.9% answered yes, while 21.7% answered no, as shown in Graph 9:

Graph 9. Habit of checking the cell phone constantly during classes.



Source: Original survey data.

If we consider the percentage of 42.1% who stated that they "sometimes" check their cell phones during classes, the number rises to 78% of students, which enunciates a worrying scenario.

According to the students, the reasons that lead them to carry out this check are: 66.9% to research some information about the content being taught; 46.9% to ask any questions about the subject being discussed; 61.4% to attend to some emergency in the personal sphere; 20.3% said they do this because teachers use non-interactive methodologies that discourage them from paying attention in class; 11.4% stated that they access their cell phones to distract themselves with a game or other resource and; 41.4% access their cell phones during classes to browse social networks.

Such data show the place of fragility in which the capacity for attention and concentration on the content is found, whose consequences are inevitable for compromising the quality of learning.

When asked if they can pay attention simultaneously to the content taught and to the information conveyed by cell phones, 19.7% answered yes, as shown in Graph 10:

Graph 10. Simultaneous attention to different information.



Source: Original survey data.

However, as Törcke (2010) points out, this is a mistaken feeling, since the ability to concentrate is damaged from the inside out, in such a way that the psychomotor stimuli stiffen as the shocks of virtual activities intertwine it, which means that the individual has no effective involvement with both situations:

In a fulminating way, the (audiovisual) shock concentrates attention on a point, in order to be able to crush this concentration through countless repetitions. The means of concentration is, properly, the means of decomposition [...]. The screen, the great filling of free time, penetrated deeply, through the computer, into the world of work; the coordination of entire processes of production and administration permeates it, in such a way that it presents itself as the teaching of the future (Törcke, 2010, p. 266-267).

The way these shocks attract attention intensely and to a single prism, dissipates attention for countless repetitions. Thus, what was once designed to hold the attention of individuals, currently functions as instruments of attention deterioration. For the author, effective concentration needs something that differentiates itself from it: a focus or impulse, to which it is directed or connected. For this reason, the difficulty of students to stay focused during classes is related to the simple movement of checking their cell phones for various reasons, a fact that takes them to other more stimulating contexts, directly interfering with academic performance.

Such interference was identified by the students themselves, when asked about the correlation between the use of these devices and the decrease in their academic performance: 36.2% of them stated that they already identified a correlation in this sense:

Graph 11. Relationship between cell phone use and impaired academic performance.

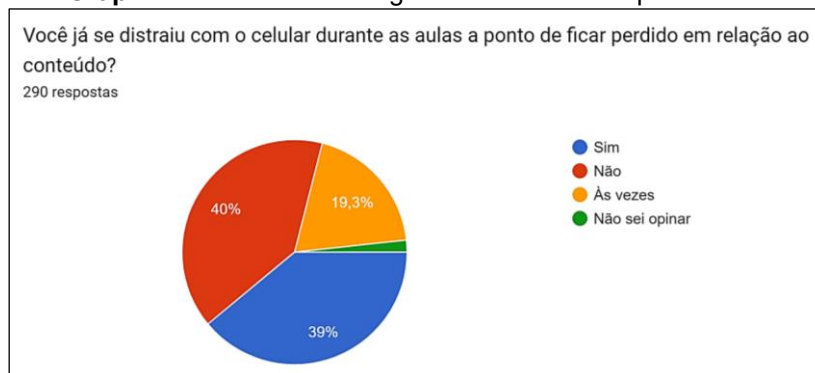


Source: Original survey data.

Again, if we consider that, in addition to the 36.2% of students who answered affirmatively, another 27.6% also recognized that they "sometimes" perceive an interference from the use of mobile devices in the classroom, the number rises to 60%, which confirms that the use of DICT without pedagogical purposes in the classroom is a challenge to be faced. It is verified, therefore, that the "substitutive satisfactions" resulting from the seduction of the virtual universe are related to the drives that human groups have sought since time immemorial, but which currently manifests itself in the inability to correctly manage DICT, resulting in dispersed attention and the absence of concentration. This reality evidences the interferences of the so-called "total audiovisuality society", which, according to Türcke (2010), prevents its users from remaining focused due to the high amount of information they access simultaneously, in such a way that the contact time with each one is not enough for them to understand it in full, which causes attention to remain crossed by other stimuli.

When asked if they had ever been distracted during classes due to cell phone use, 39% of the students acknowledged that they had, as shown in Graph 12:

Graph 12. Distraction during classes due to cell phone use.



Source: Original survey data.

Again, if we consider the percentage of 19.3% of students who answered that they "sometimes" get distracted, the number increases to 58.3% who recognize that the comprehension of the content is eventually affected by the use of cell phones during classes.

This is because, according to Türcke (2010), the audiovisual shock and the sensation that the use of DICT provides is so pleasurable that it has become the perception par excellence of modern and urban sensory reality.

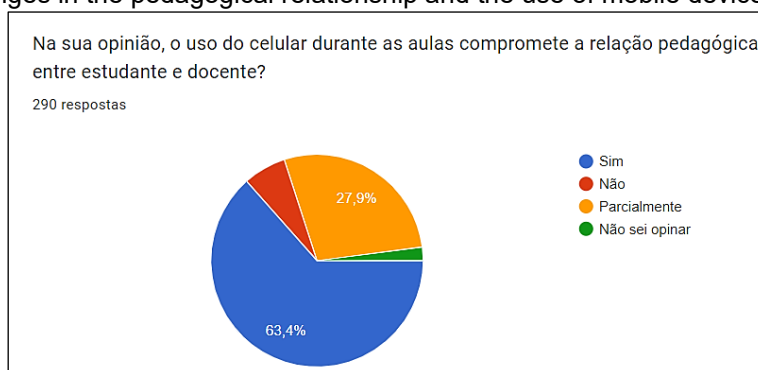
The stimuli of the everyday environment are no match for the torrent of media excitement of the spectacular; they fall below the limit of what the sensory apparatus can absorb [...] They represent too few stimuli to be perceived. The torrent of excitement, however, represents too many stimuli. It places the organism in the paradoxical situation of no longer being able to transform pure stimuli into perception (Türcke, 2010, p. 65).

Such evidence reveals that the use of traditional teaching methodologies already shows signs of failure, especially when the intention is to maintain the concentration of students to mobilize them to actively engage with the contents.

The transcription of texts and formulas, formerly the common mark of the so-called traditional pedagogy based on the memorization of contents, can suddenly become (...) a measure of motor, affective and mental concentration, of inner recollection and, why not say, of recollection, that is, a measure not very different from what, in theological language, is called devotion (Türcke, 2010, p. 305).

The diverse sensations resulting from this situation represent real obstacles to effective learning, even harming the teacher/student/knowledge relationship, which in fact was confirmed by the students, as shown in Graph 13:

Graph 13. Changes in the pedagogical relationship and the use of mobile devices during classes.



Source: Original survey data.

As Postic (1990) points out, pedagogical relationship is "the set of social relations that are established between the educator and those he educates to achieve educational objectives [...], relationships that have identifiable cognitive and affective characteristics, that have a development and live a history" (p.12); It is a relationship of trust, in which teachers and students mutually assume the responsibility of building a collaborative pedagogical practice, which goes beyond the mere presentation of content.

Thus, once the students recognize the compromise of the pedagogical relationship due to the use of DICT during classes, it is possible to assess that both the trust and the mutual responsibility for the construction of the pedagogical practice are somehow shaken. After all, as Libâneo (1994) states, "there are intimate mechanisms proper to the pedagogical relationship that include mediations of a social and political nature" and "the analysis of individual experience and the very effectiveness of the teaching situation" (p. 156). In this way, the didactic mediation inherent to this relationship is compromised, which indicates that students are informing the need for a review in the organization of the teaching and learning process.

Teachers are currently forced to consider the direct interferences of DICT and its consequences for more meaningful learning, since the data show a challenging reality, especially in relation to the identification of the presence of nomophobia in educational environments, especially in Higher Education:

The refined audiovisual vampires do not suck blood, but rather, to use a Marxian form of expression, nerve and brain. They absorb an enormous amount of excitement when they incessantly inject their "being noticed", and they themselves cannot retain any of it, because they do not satiate themselves at any time and always suck more (Türcke, 2010, p. 280).

As students seek new stimuli and sensations in DICT, teachers are increasingly challenged by a totally transformed educational reality, which has almost obligatorily instigated, not only the development of a new didactics, but mainly, a new pedagogy, which considers the new educational demands that are imposed.

FINAL CONSIDERATIONS

As we have seen, nomophobia is a recent phenomenon that emerges as a worrying factor, especially among higher education students, and inaugurates discussions about its cognitive implications for learning and life in the emotional and social spheres.

The objective of the research was to understand the consequences in terms of impaired concentration and academic performance in Higher Education, due to the exacerbated use of mobile devices during classes. The data showed that there is recognition by students about the impairment of learning due to the use of DICT during the explanation of the contents, indicating that this is a problem to be faced to ensure the quality of learning in the current educational context.

The reasons given by the students for using the cell phone during classes were: to research information about the content being taught to solve possible doubts; to respond to a particular request; due to inadequate didactic mediation on the part of teachers and; the most worrying: to distract himself with games or browsing social networks, which confirms the influences of what Türcke called concentrated distraction.

Regarding the consequences of deprivation of cell phone use during classes, most participants did not identify a correlation in this sense, although they confirmed the need to perform several other daily activities with the support of cell phones, evidencing signs of nomophobia in the private sphere.

Regarding the changes observed in the pedagogical relationship, it was possible to assess interferences in the use of DICT, evidencing the need for educators to pay attention to the didactic-methodological strategies inherent to the teaching process, in order to minimize the compromise of the quality of learning.

The results obtained constitute a warning for university education, in view of the concentrated distraction that plagues learning resulting from nomophobia identified in the behavior of students.

We conclude that the excessive use of DICT during classes compromises the quality and educational emancipation of future professionals, and it is necessary to develop new investigations on the subject, in order to identify actions related to the revision of the didactic process and the need to establish institutional regulatory frameworks that can mitigate the negative consequences of this context.

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