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ORIGINAL

Possible behavioural impacts on university students through the use of AI: reflexive analysis

Posibles impactos comportamentales en estudiantes universitarios por uso de IA: análisis reflexivo

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ABSTRACT

Talking about AI requires a dialogue on mental health and this impacts the first and if we assume that all university students enjoy mental health is necessary to educate them not only the use of AI but its dosage, alerting them about impacts and benefits, Unfortunately, this is not the case today, where dynamism plays a preponderant role only overridden by technology that provides speed and assertiveness only for those who know how to use it and make the most of it is collecting high bills that reflect social fragmentation and, often linked to this, mental health. This is why, by taking up the psychiatric sociology which links mental illnesses associated with human behaviour, We seek to generate a reflective analysis of what is going on in the minds of young people for overuse or misuse of AI that invites them to detect the need with the desire to learn about mental disorders so they can use AI safely and responsibly. The AI saves time, and facilitates actions, on the other hand, slows down psychic and mental processes of people who use it same reason why we are obliged to resume science in a theoretical framework of multi and transdiscipline for what we will use sociology, psychology, psychiatry and anthropology to put together a framework based on normative precepts, provide the reader with notions of risk and possible guides for preventive actions for the well-being of his mind without having to give up AI.

Keywords: AI; Behavior; Mental Disorders; Conditions; Neuroscience.

RESUMEN

Hablar de IA obliga a dialogar sobre salud mental y esta impacta a la primera y si partimos presuponiendo que todos los estudiantes universitarios gozan de salud mental es menester educarlos para no solo el uso de IA sino su dosificación, alertándoles sobre impactos y beneficios, lamentablemente, esto no es así, hoy, donde el dinamismo juega un papel preponderante allanado solamente por tecnología que brinda celeridad y asertividad solo para quien la sabe utilizar y sacar el mejor provecho está cobrando altas facturas que reflejan en la fragmentación social y, muchas veces vinculada con esta, la salud mental. Es por ello que retomando la sociología psiquiátrica que vincula los padecimientos mentales asociados a comportamientos humanos, buscamos generar un análisis reflexivo del que está pasando en la mente de los jóvenes por exceso o mal uso de la IA que invite a detectar la necesidad con el deseo de aprender sobre trastornos mentales para que puedan hacer uso de la IA de manera segura y responsable. La IA ahorra tiempo, y facilita acciones, por otro lado, ralentiza procesos psíquicos y mentales de personas que la usan misma razón por la que estamos obligados a retomar la ciencia en un marco teórico de multi y transdisciplina para lo que nos valdremos de sociología, psicología, psiquiatría y antropología para armar un cuadro sustentado en preceptos normativos, brinde al

lector nociones de riesgo y posibles guías de acciones preventivas para el bienestar de su mente sin que por ello deba renunciar a la IA.

Palabras clave: IA; Conducta; Comportamiento; Trastornos Mentales; Afecciones; Neurociencias.

INTRODUCTION

Talking about conduct and behavior is not a new topic; there are hundreds and thousands of books that have addressed this subject, some focused-on school performance, others on family, and even on finances, so nothing different or new has been found. On the other hand, talking about artificial intelligence (AI) is also nothing new. Since the 1960s, if not earlier, there has been talk of AI, and there are hundreds of texts and books in different languages on the subject. However, there are few texts aimed at mental health for non-health professionals, much less aimed at AI, and even fewer much less that link mental health, conduct, behavior, and AI. Texts related to a university student approach are extremely rare, which is highly concerning to this writer given the rapid advancement of AI, where something new emerges today, and by the time we realize it, the technology has already evolved, leaving us overwhelmed, unmoved, and defenseless.

This paper aims to guide readers through the basics of mental health, behavior, and AI, touching on well-known historical events to shed light and provide insights for those less familiar with these topics (while I ask experts to forgive me for touching on topics that you already master) to identify possible patterns of behavior and/or conduct derived from the use of AI for reflection and preventive analysis that guarantees the maintenance of mental health. The basis of this text stems from the author's experiences in two areas: the first is that of the author as a student, where he touches on the change brought about by generational diversity, as before there were only mail-order courses in addition to the face-to-face courses that prevailed in the boomer and Generation X generations, and the opening up of face-to-face, open, distance, virtual, deferred, and hybrid educational modalities. Quoting the Royal Spanish Academy - RAE[1], a generation is understood to be "a group of people who, having been born around the same time and received similar education and social and cultural influences, adopt a somewhat common attitude in the sphere of thought or creation." One study defines a generation as "an age group that shares a set of formative experiences throughout its history that distinguish it from its predecessors."[2]

Generation X had (according to interviews, what I learned in my master's degree in psychology, and my own experience) had to learn (not all of them) to love, to express emotions and feelings so that their children, the subsequent generations, would not feel embarrassed or ashamed to feel and be loved, with some parents (WHO) going to extremes to protect their children, causing some of them to develop intolerance to frustration and anxiety. Linking everything together, we will see in the development of this work how 1.-According to the experience, studies, and research of the author of this text, every individual has a life story where we must (at least those of us who are dedicated to the study of mental health) assume that we all have damage, a mark (whether in expressing ourselves, interacting with others, or attention deficits, etc.) and an impact from our past.[2]. 2.-That this mark offers a great difficulty when it comes to facing, just facing AI, imagine, dear reader, the use of it.[3]

The experiences I mention a few pages back, where I touch on some changes due to generational diversity, the second of which relates to virtual education in virtual or hybrid modalities, which I have already mentioned in two previous books to which I contributed a chapter (XXII pp. 339-358) related to governance and resilience in education, a multi-, intra-, and transdisciplinary construct for the book Educational Challenges in the Face of New Virtual

Environments in Times of COVID-19 in Tarazona. And the text "Psychoeducational innovation for the improvement of the business work environment" for the international scientific journal Mundo Científico Internacional (MUCIN). The emotional, cognitive, and social impact of virtual education on teachers, who have suddenly had to face teaching classes in front of a black screen, has been addressed. If this situation is extrapolated to students, it is possible to analyze how it affects their learning and emotional development.[4]

All these aspects, combined with our training in sociology (2012), anthropology (2013), psychiatry (2024), and philosophy (2024) in our doctorate in knowledge sciences and information management (2017), together with our teaching experience since 1985 (not counting our expertise as students, which still endures as we consider ourselves eternal learners because we continue to study)[5] at the high school level (where we were coordinator of the humanities area in 2007), bachelor's degree (2007), master's degrees (2011, 2012, 2013, 2014), doctoral (2013, 2014, 2017), and postdoctoral (2024) levels. Combined with more than 1, r academic hours in diploma courses and courses on AI from 2023 to date, this has allowed us to conduct analyses of emotional and behavioral impacts on university students, which we have already presented in national and international presentations, such as the presentation we gave for the University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru at the 1st Intercontinental Congress "Artificial Intelligence in University Research and Teaching"[6] on the topic of *"The Sociology of Technology"* (June 28, 2025) (March 1, 2025), at the "International Seminar on Artificial Intelligence" on the topic of "Human Behavior in the Face of AI" (February 9, 2025) **,** when we gave a talk for the University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru at the Latin American and Caribbean Congress "Philosophy and Technology of Education in the Digital Age; Reimagining Education in Latin America and the Caribbean" on *the* topic *"Sociology as a Link between Philosophy and Technology"* (November 23, 2024), University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru at the international seminar Critique of Western Epistemology and Multidisciplinary Scientific Research in the University System with the topics *"Socio-quantum research; a new way of seeing the whole, neurobiology of research and education, emosocial model, education and communication for teaching"* (12, 14, 19, 21, and 28 August 2024, University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru with the theme *"Philosophy necessary to understand and make use of artificial intelligence"* 14 August 2024) Ducens University with the theme *"Psychosocial support in educational contexts"* (July 8, 2024) University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru with the theme *"Human behavior before, by, and for artificial intelligence"* (July 3, 2024) Educational symposium, Guatemala, theme *"Artificial intelligence as a creation of value and multidimensional responsibility"* (May 7, 2024), World Congress, University of Experience and Universal Knowledge Peru and the College of Research and Teaching of Peru with the theme *"Artificial Intelligence as a Creation of Value and Multidimensional Responsibility"* (April 19, 2024) Conservatory "Artificial Intelligence: The New Triggers of Technological Change," from the Technological Institute of Computer Sciences of Reynosa Tamaulipas.[8] (February 28, 2024). First Intercontinental Congress 2024 Philosophy of the Human Mind and Artificial Intelligence at the Scientific Research and New Teaching, from the Federico Villareal University Faculty of Engineering, Environmental and Ecotourism, and the College of Research and Teaching, both from Peru, with the theme *"Proposal for a new philosophy to adapt human behavior to artificial intelligence"* (February 17, 2024). IV World Congress: Reconceptualizing the University in the Dynamic Complexity of Ontological, Epistemological, Methodological, and Operational Aspects, held by the Federico Villareal University Faculty of Engineering, Environmental Studies, and Ecotourism and the College of Research and Teaching, both in Peru, with the theme *"Mental Health in Teaching as a Sociological Cause and Effect"* (February 2023). To mention three years

of analysis and research activities to date, solely in relation to human conduct and behavior associated with the use of AI. (We have been studying human behavior since 2007).[9]

Background

We will briefly address the historical basis, as mentioned in the introduction, of the contexts of mental health, conduct, behavior, and AI. University educational processes and specific parameters of mental processes are important to us, as we consider it essential to understand our origins in order to learn from our ancestors, which facilitates our comprehension of the phenomena that interact in the object-subject space-time that is the individual and AI. Since the objective of this text is not to address history but rather the potential behavioral impacts on university students resulting from the use of AI, we will not delve into the details of history; instead, we will focus on the elements that are significant and relevant to the present work. With this, we aim to provide a brief overview of mental health, psychology, psychiatry, psychiatric sociology, and social psychiatry, as well as the brain development of the individual, the formation of the psychic structure, and behavioral parameters, all while linking these concepts to the hypothesis of potential behavioral impacts on university students. Therefore, the analysis will encompass development, addressing all topics in a comprehensive manner.[10]

History of mental health

Personality, as later identified, is based on temperament, character, and attitudes, with temperament being the psychological factor with which a person comes into the world, character is the way of behaving modified by education, interpersonal relationships, and the surrounding world. Attitudes are the predisposition to react to particular objects, situations, or people, which are assembled in three ways: cognitive, which embraces ideas, concepts, or beliefs; affective, which governs pleasure or displeasure (Freud spoke of the life instinct and the death instinct); and behavioral, understood as actions or ways of reacting. Hippocrates discovered a connection between the mind and body, recommending psychosomatic observation for the treatment of his patients, always considering both emotions and ailments. He was the first to recognize the brain as the seat of the senses and intellectual life.(Notes taken from Dr. Moisés Ponce Malaver in the diploma course in forensic psychiatry 2023).[11] According to the World Health Organization (WHO) (Definition of mental health, 2024), mental health is a state of mental well-being that enables people to cope with life's stresses, develop their abilities, learn and work effectively, and contribute to the improvement of their community.[12]

The above has to do with the fact that conduct and/or behavior can be altered by physiological/chemical factors and structural interaction of the brain, including degenerative processes or malformation, which is why psychiatry is involved, while conditions of trauma and alterations in perception call for psychology, which we will see later. The excessive or inappropriate use of AI can lead to the first or second postulate, with a highly significant impact not only on the student but also on the family.[13]

Sociology, psychiatry, or social psychiatry

As seen in the introduction, the term "social psychiatry" emerged at the beginning of the 20th century, according to Huertas[3], let us remember that the French physician Philippe Pinel was one of the first to treat patients with mental disorders humanely, as early as 1792.[14] It was not until 1939 that Robert Faris and Warren Dunham published their work, begun in 1912 in Chicago, entitled Mental Disorders in Urban Areas: an Ecological Study of Schizophrenia and Other Psychoses, in which they associated poverty with mental health (American Journal of Public Health and the Nations Health; 1960), laying the foundations for a transformation in the way mental disorders were viewed from a hygienic perspective. This led to the International Mental Health Congress being held in London in 1948, where parameters were established

linking mental health to poverty, levels of education, citizenship, and other factors, proposing civil, social, and humanitarian improvements.[3] Meeting in Geneva, Switzerland, in 1950, the Committee of Experts on Mental Health redefined the concept of mental health as "the set of activities and techniques that promote and maintain mental health," making it clear that in order to achieve such mental health, it is necessary to establish the "condition, influenced by biological and social factors and subject to fluctuations, that allows the individual to achieve a satisfactory synthesis of their own potentially conflicting instinctive impulses; to form and maintain harmonious relationships with others; and to participate in constructive changes in their social and physical environment".[15]

The British Maxwell Shaw Jones (1907-1990) was the "most significant figure in the social psychiatry movement (1952)." While working in Scotland in a hospital emergency room, he collaborated (1941) with a team of multidisciplinary professionals to study the cardiofobias of soldiers, proposing to provide group therapies that would encourage participation in a playful way with theatrical sociodramas, which led him in 1945 to have a team of 60 experts at Belmont Hospital in the United Kingdom to treat mental disorders in prisoners of war, called the social rehabilitation unit, the first hospital (Henderson) in London.

In mid-1958, August Hollingshead and physician Frederick Redlich published a text entitled Social Class and Mental Illness, which led the WHO committee of experts in the field of mental health to add the concept of social psychiatry focused on "preventive and curative measures aimed at enabling individuals to make satisfactory use of their lives in relation to their own social environment"[3], which defines the complex environment as obstacles to individuals' adaptation, showing that a social support network provides a shield for the prevention and cure of mental disorders.

In Europe, specifically in Spain, José Luis Martí-Tusquets, a psychiatrist and student of Dr. Ramón Sarro Burano, emerged. Dr. Martí-Tusquets was director of the Frenopathic Institute and professor at the School of Psychiatry of the Faculty of Medicine in Barcelona. He was influenced by anthropologists Claude Lévi-Strauss (1908–2009), Bronisław Malinowski (1884–1942), founder of British anthropology, and Margaret Mead (1901–1978). The latter two focused on "abnormal" behaviors in the cultures they studied for a long time, and their findings and reasoning led him to opt for comparative psychiatry or transcultural psychiatry, which can be referred to as psychiatric sociology as its counterpart. We would like to highlight the biopsychosocial model proposed by psychiatrist George L. Engel (1913-1999) in opposition to the traditional medical model which, for Engel, neglects the psyche and social factors that influence an individual's perceptions (Bolton 2019).[16]

Martí-Tusquets refers to social psychiatry as "that discipline which, using knowledge from the social sciences, focuses on the research, study, and treatment of mental illnesses, also seeking to prevent them through the proper integration of the individual into their social environment"[3], finding pathologies such as schizophrenia resulting from precarious social, financial, urban, and racial situations and racial situations, making urban and anthropological comparisons with those referred to by sociologists Robert Faris and Warren Dunham, identifying the predominant value of the family, where they refer to "disqualifying family relationships"[3], taking up the proposal of Gregory Bateson (1904-1980) who, with the Palo Alto California school in 1956, developed the double bind (1956) as a causal agent of schizophrenia resulting from communication and interpretation problems in the family, a concept taken up and expanded upon by Ronald David Laing (1927-1989) in 1971, confirming the role of the family and the community in the possible incidental causes of developing schizophrenia.[17]

Building on this idea, psychiatrists such as Joan Obiols i Vié (1918-1980) championed (1963) the postulate that *"psychiatry must always be* social"[3] because most psychiatry (remember that it was in the late 19th and early 20th centuries that psychiatry gained momentum) focused more on the physical and biochemical aspects of the mind, leaving aside processes as secondary

to external factors affecting individuals, which led French sociologist and anthropologist Roger Bastide (1898-1974) in his work "*Sociologie des maladies mentales* (1967)" to question whether madness was a social phenomenon arising from social causes.[18]

Returning to Spain with Dr. José Luis Martí-Tusquets, he published an essay in 1976 entitled "*Social Psychiatry*," in which he supports group dynamics as a means of influence within the group[3], which is not too far removed from what was proposed almost a century earlier in 1895 by Gustave Lebon (1841-1931) in his work "*Psychology of the Masses*", or Emile Durkheim (1858-1917) when he spoke of collective consciousness (1939), coinciding with Gabriel Tarde (1843-1904) in his work "The Public and the Mass (1898)", which countless sociologists, anthropologists, and philosophers touched on with Freud, Jung, etc.[19]

The social field impacts and influences the perception of the individual, leading them to act in unconventional ways. This precept is associated with Kurt Lewin (1890-1947), founder of modern social psychology, in his work of the same name (1939), where he associates the Gestalt branch with this struggle of "attraction and repulsion" in which alterations of systems occur in the tension fields of groups, identifying barriers and negations between one or the other, focusing on small groups such as families.[20]

Huertas[3] mentions in his work the psychiatrist and psychoanalyst Harry Stack Sullivan (1892-1949) and his theory of interpersonal relationships ("self system"),(1953) considers in his work "Schizophrenia as a Human Process" (1962) that "mental illness is a problem of communication and relationship between cultural and psychosocial factors within which the individual's personality develops".

Professor Antonio Seva Díaz (1938-2004), founder of *the European Journal of Psychiatry* (1986), researched the central nervous system, obtaining in 1974 the position of Associate Professor of Psychiatry and Medical Psychology at the *University of La Laguna* (Canary Islands). He conducted research (1981-1983) on the psychosocial characteristics that can alter the mental and physical health of the population, publishing various texts, notably two of his books, "*Medical Psychology: Psychological bases of health and disease states*," and *Mental hygiene*, associating social factors as converging in triggering underlying mental disorders and even identifying emergencies related to them.[22]

It is worth mentioning the significant contributions to social psychiatry made by Michael Foucault (1926-1984) in the 1980s after studying sciences such as psychiatry and medicine, as well as institutions such as prisons, where he analyzes power as object and subject, discourse, force, language, the deconstruction of norms, context, and resistance, which translates into the analysis of social structures and, more specifically, the family structure.[23]

Brain development of the individual

All mammals have brains, but it is their superior development that gives humans cognitive functions and functional abilities. In humans, the development process differs when the egg is fertilized, and the formation process begins with the neural plate in the fetus. We will not delve into the details of brain development and its various components, as this would require an entire volume. The author aims to provide a concise overview of the brain's functions and development for the general reader. Therefore, based on the above, we will continue with the analysis of brain development, where two tubes are formed from the neural tube: a cephalic tube (which extends upward) and a caudal tube (which extends downward). The upper part, which is the one we are concerned with, is subdivided into three elements that we will call vesicles: the forebrain (which in turn will be divided into the telencephalon and diencephalon, which is what concerns us), the midbrain, and the hindbrain. We will not discuss their subdivisions or the structures that give way here.[24]

Each lobe is divided into four anatomical-functional groups, including the central motor areas, the dorsolateral cortex, the orbital regions, and the medial tissue. Thus, we have the frontal lobe

(which processes internal and external information and generates responses and movements), as well as the parietal, occipital, and temporal lobes. The frontal lobe, specifically its lateral portion, is responsible for tasks that require meticulousness. In contrast, the dorsolateral prefrontal cortex encodes information when the amount received exceeds the capacity of short-term memory. It is subdivided into three anatomical zones (lateral, medial, ventral, or orbital), in which a lesion will cause learning problems, playfulness, euphoria, irritability, intolerance, sudden depression, impaired social judgment, and reversal of perception-action-stimulus-response, as described by Fellows and Farah in 2003, since is highly connected to the limbic areas of the temporal lobe at the medial level, which is related to declarative memory areas such as the hippocampus, the perirhinal cortex, entorhinal cortex, and amygdala, which generates emotions, diminishing intelligent processes, and the hypothalamus, which is the body's internal clock and converts hormonal stimuli into electrical stimuli, thus governing motivational and emotional states, where, if there are lesions, the individual will present cognitive deficits.[25]

In these delayed analyses, the dorsolateral and ventrolateral regions of the two hemispheres will respond to the stimulus received. If this information needs to be manipulated, the dorsolateral area will be more stimulated. If the stimulus is perceived in reverse, that is, before the delay, the dorsolateral region will not be stimulated as much, since greater speed means less stimulation. Within the perception of stimuli, the area known as the cingulate gyrus analyzes emotions, the insula performs behavioral interpretation, and the basal ganglia are involved in the management and generation of persistent, obsessive thoughts.[2]

The prefrontal cortex plays a significant role in behavior, reinforcement coding, punishment, and social relationships. It also plays a role in cognitive functions, notably those identified by Mesulam, including associations with other structures for cognitive processes and interaction with the limbic and paralimbic systems, which explains why emotional factors can reverse sensory impressions, thought, mood, and perception. Therefore, if students study while emotionally and/or motivationally stimulated, their receptive abilities will be greater, improving their attention, concentration, and ability to assimilate concepts, enabling them to concatenate congruent and assertive ideas.

We want to remind the reader that the hippocampus is one of the areas associated with memory and learning, being larger (25 %) in women than in men:[2]

1. The prefrontal cortex governs reasoning, analytical, and executive functions, reaching full development at approximately 25 years of age in men and 21 years of age in women (Calixto, 2024).
2. When the stimulus is significant, the cingulate gyrus analyzes what the individual is feeling, passing the stimulus to the insula, which interprets it, spurring the amygdala to react, bypassing the prefrontal cortex, removing the brakes, and leading the person to act inconsistently.

Emotion is a particular state of an organism that exceeds well-defined conditions, accompanied by a subjective experience and somatic and visceral manifestations (Doron and Parot; 1998) taken from https://coachingexito.com/que-son-las-emociones/. In other words, it is a reaction to a specific environmental stimulus. This reaction, in turn, develops in three types of components: physiological, psychological, and behavioral. Emotion in humans has a very specific role, according to the theory of the three F's: fight, flight, or freeze.

Human intelligence is characterized by "psychological functions or sets of functions through which the organism adapts to its environment by producing original combinations of behaviors, acquires and explores new knowledge, and eventually reasons and solves problems in a manner consistent with the rules set forth by the formalizations of logic".

DEVELOPMENT

Addressing neurodevelopment, leaving aside the anatomy and physiology referred to in the previous section, we now take up the notion of the psychic structure from psychoanalysis, based on the theories of Freud, Lacan, Jung, among others, which establish that at birth, children identify with their mothers as part of themselves during the first few months, and it is not until they consciously or unconsciously see themselves reflected in the mirror that they begin to become aware of their surroundings and start to assume their role in society, as Maslow mentioned in his pyramid. Freud describes a mental framework consisting of three elements called "ego, id, and superego," where the ego is governed by the reality principle, is the consciousness, and is affected by the external world, which can influence the internal world, allowing it to adapt to reality. while the id is the child who is unconscious at birth, arising from the pleasure principle, and the superego comes from the mother and is unconsciously represented by the father who demands the subject's enjoyment."[26]

So when there are tensions between the ego and the id, the individual will experience neurotic and hysterical symptoms, and when there is tension between the ego and the superego, there will be signs of melancholy, so that when there are conflicts between the ego and the external world, we will have psychosis, schizophrenia, and paranoia. If there is an alteration in the way the individual sees the world, clinical alterations will occur from a psychoanalytic perspective in three areas: neurosis, psychosis, and perversion. In neurosis, we will have repression, anxiety, doubts, hysteria, neurosis, and obsessive phobias, while psychosis will give us data on autism, paranoia, schizophrenia, and melancholy, ending with perversion with its aspects of fetishism, masochism, sadism, and antisocial behavior, which include psychopathy, sociopathy, and/or antisocial personality disorder.[27]

Ergo, there are two key stages for individuals[4] from four to seven years old, when children acquire all the emotional tools they need to face the world, and from 7 to 14 years old, when children learn all the social and moral lessons they need for coexistence. Therefore, whatever happens during these stages, if we focus on age, we will see deviations in conduct and/or behavior. Behavior is an unconscious entity that obeys emotional states and/or conditions that can be voluntary and/or involuntary, while conduct is conscious, social in nature, and can be reinforced in two ways: energetically and cognitively. To illustrate this, if a child receives verbal and/or physical abuse, it will manifest itself in adulthood, so the timing and depth will determine the modus vivendi of the now adult.[28]

With the above in mind, dear reader, imagine the emotions generated by video games, the excitement of programming, and the detonation of emotions and feelings that this will cause in university students. If I may, let's compare computer systems with the cognitive system, where both converge in the student's psyche. So what happens?[29]

AI only serves to save time, facilitate work, and concatenate information that is not always true, as mentioned by Paul Virilio (1932-2018), who was nicknamed the philosopher of speed or "dromologist," founder of the technological society with several books to his credit, warned of the risks of technological speed. Just look at the intolerance and frustration generated by "likes" and the rapid scrolling of social media (TikTok), where algorithms designed in two seconds determine that if something does not attract your attention, you will move on.[30]

For Virilio, one social condition we experience is the passivity of waiting, where the individual no longer seeks, does not move physically or mentally, atrophying brain structures due to lack of use, such as those involved in orientation and the ability to solve problems mentally in a quick and assertive manner, losing the gap that divides man from technology, in addition to the physical risks, as we will see, virtual risks arise from a loss of reality, as mentioned by Eslibertad[5] in his work relating the robot syndrome to the well-known science fiction film WALL-E: A dystopia about technological totalitarianism where the main character, in order to save the world, embarks on a series of adventures in space but ends up alone. When he returns

to Earth, he is unable to adapt because his emotions and feelings have changed. In other words, he had not realized his emotional changes or deficiencies, and because he did not work on them, he lost them.[31]

How many phone numbers do you know by heart? Can you remember all your appointments if you are somewhere without access to a screen? How would you fix an appliance, prepare a meal, or even get to many places by car without using YouTube, Wikipedia, or GPS? Artificial intelligence is increasingly resembling human reasoning, but it remains quite distant from human emotions. A study by Cerisola[6] found that children aged between a few months and five years old had low levels of cognitive and language development due to early exposure to screens, as well as being overweight, which leads to premature cardiovascular and endocrinological conditions, among others. The saddest thing is that screens are used to keep them calm because of the adrenaline rush provided by games and the changes in speed, rhythm, and lights of cartoons and games, which manifest themselves in intolerance, passivity, impaired concentration, impaired cognitive, social, and emotional skills, and high impulsivity, stunting executive skills.[6]

If children become dependent on AI, coupled with their capacity for analysis, reflection, and problem-solving, as Cerisola refers to it, their ability to think critically is increasingly compromised.[7] If this happens to children, what will happen to adults who grew up under AI schemes (Generation Y, Generation X, Generation Alpha)? At best, they will have problems adapting socially, with no critical thinking skills and a significant weakness in the face of adversity, as their decision-making will be poor. Although this analysis focuses on university students, we are referring to two distinct groups: current university students and those who will arrive in eight or ten years (hopefully), which is why we are using terms that fluctuate between "children" and "adolescents".[32]

Prolonged, undosed exposure to AI accelerates the growth of babies, affecting brain development and leading to children with attention deficit disorder, tonsillar hijacking (tantrums or temper tantrums), and learning difficulties. Primary school children will see their attention spans affected, have low academic performance, and may develop sedentary lifestyles, insomnia, difficulty sleeping, dyscalculia, and problems with reading.[8] In 2016, the American Academy of Pediatrics had already warned about the risks to minors and published the following recommendations/restrictions on its Healthy Children website, transcribed here as they were published: "Children under the age of 12 should not use cell phones or tablets without parental supervision. In addition, the study said that babies aged 0 to 2 should have no contact with technology. Children aged 3 to 5 should only use it for 1 hour a day, and those aged 6 to 18 for only 2 hours a day."[33]

But what about university students? Excessive use of technology, AI, and the internet causes changes in the prefrontal cortex (executive functions), alters memory, language, and hearing in the temporal lobe, and alters perception and visual information in the occipital lobe, which is the seat of primary and secondary visual functions. and in the brain, it alters thinking and cognitive ability through "zapping," hindering memory and capacity and altering the ability for self-perception, concentration, and introspection,[6] so the more time spent on screens, the less connective functionality. "Digital natives are the first children with a lower IQ than their parents." The Digital Moron Factory Michel Desmurget.[34]

Well, the work promised to discuss the possible impacts, so we will go from the general to the specific, finding weaknesses in university students in terms of emotional resilience. Today, many ask for everything via WhatsApp, invite a boy or girl out on a date, etc., to avoid the rejection of a refusal. This makes it difficult to recognize and explore changes, placing students in a comfort zone that makes it difficult for them to be happy and, in addition to all of the above, leads to a loss of discipline.[35]

Now, we will look specifically at these possible impacts, which we will refer to as functional disorders, but what are functional disorders? According to the IntraMed website, doctors,

medicine, and public health in 2020, the definition states that "they are sets of symptoms that cannot be explained by traditional medical theory, namely, a specific pathophysiology." Such as inflammation (colitis), fatigue, and depression.

In previous pages, we discussed the importance of linking a person's biological and psychological needs in the form of biopsychosocial interaction, based on Engel's postulate. Therefore, if we neglect this parameter, in addition to the aforementioned structural conditions, we will have genetic alterations, hormonal alterations such as catecholamines, which include adrenaline and dopamine, which are involved in emotional processes, dopamine being the guarantor of pleasure that is secreted when a young person achieves something (of any kind), norepinephrine (which regulates sleep, motivation, and satisfaction) which affects depression, anxiety, behavioral disorders, and attention deficit hyperactivity disorder, and serotonin (which helps regulate attention, behavior, and body temperature, among other things) which, when lacking or low along with dopamine, alters the sending of messages from the brain, causing delusions and hallucinations, a condition present in schizophrenia.[37]

Attempts to regulate AI have already begun, as Guerra[9] tells us, referring to the United Nations report "A Framework for Ethical AI at the United Nations," which proposes policies for the conscious and responsible use of AI. What is relevant to our topic is that they conduct a risk analysis weighing the points we are discussing in this paper, which, I repeat, are obtained from the United Nations and which we simply transcribe in order to delve deeper into the subject. The UN's hazard identification and risk assessment places education at level three of high risk, with the maximum being the intolerable/unacceptable level four, level one being minimal risk, and level two being limited risk.[38]

Based on all of the above, the disorders associated with prolonged use of AI in mentally healthy people (if there is a mental disorder or mental illness, the situation will vary) are emotional, such as stress, anxiety due to job loss, for example, depression, forgetfulness, confusion, loss of concentration, addiction, social isolation, and in more severe cases (mental illness due to an organic cause, whereas mental disorder is psychological in origin) paranoia that they are being watched, that they will be replaced, etc., feelings of injustice due to algorithms that may maintain discriminatory biases, dependence, feelings of isolation and/or abandonment, sleep disorders, loss of reality.[39,40]

CONCLUSIONS

AI is here to stay and, what's more, to evolve. The issue here is that it is faster than our ability to react, which causes us unease. We know that something about us and our relationship with AI doesn't quite sit right, but we don't know what it is, and sometimes we let ourselves be ruled by adrenaline rushes. How does this work? Teachers assign a topic or assignment, and students, confident that ChatGPT or Copilot will come to their rescue, they trust (not all of them), let their guard down (not all of them), and leave the work itself to the last minute, which they generate under an adrenergic rush. Since their brains are already conditioned to obtain dopamine in a short time (in the past, we studied to obtain a degree, that is, we already knew it was a long-term process), today's young people seek immediate satisfaction, plunging themselves into despair and demanding patience for an "now, here, already") and, confident in their immediate success, they quickly obtain two things: dopamine for the pleasure of an achievement that did not mean anything relevant and the product required by the teacher. One of the elements that mark a starting point is the perception of individuals and the way they interact with AI.

Let us not forget another type of impact that will always be present, which is the critical attitude towards information and the use of technologies that, although it is the responsibility of the university student, does not exempt parents and members of an educational institution (because it concerns everyone, not only the education but also the safeguarding and integrity of

the students). This "wealth" of information alters the perception of the quality of information in favor of the quantity of information in practice. Intelligence paves the way, but at the same time it makes us negligent, incapable of acting without networks, without a signal, and this is leading us to a dynamism of modification and loss of skills, changing habits and ways of interacting with each other, which is why we must emphasize that AIs are a means, they should never be considered an end.

We have already seen how human behavior changes, but we must not forget the other type of behavior referred to by Fernández Marcial: "Informational behavior refers to the behavior, attitude, and aptitude of individuals towards the access, use, and communication of information, conditioned by the motivation, environment, and context of the individual." Information is power, said Foucault, and it is everywhere. We cannot control it, but we can learn to dose it and, to understand it better, we suggest reading the book (2010) The Shallows: What the Internet Is Doing to Our Brains by Nicholas Carr, who argues that internet use is reducing our ability to read and think critically, and that AI can affect our perception of personal fulfillment and happiness.

Teachers must not only teach but also "challenge" students to develop reflection and analysis by making classes more dynamic using the flipped classroom approach, because after 21 minutes of attention, the brain becomes "saturated" and no longer learns. If, as teachers, we do not know how to manage the pace and prosody of the student, they will slow down and fall into an emotional and intellectual slump that will prevent them from learning. Let us remember that artificial intelligence (AI) does not replace the act of thinking, but rather expands, amplifies, and enriches it.

Let us assume, then, that every teacher and every student, due to their personal life history, has a mark that has fortuitously led them to "learn" to relate to the aggressive world, creating adults with a "functional" appearance but who, deep down, have an emotional "injury" that leads them to excessively demonstrate an abuse of these defense mechanisms in clear personality disorders (remember that personality is the sum of character and temperament, and disorders as such are mental health conditions caused by pronounced, rigid, and maladaptive personality traits that generate conflicts in social relationships, institutions, etc.).

"AI learns and trains with people, so the most important source of bias is the human behavior it imitates." Fernando Díez Ruiz. Professor at the University of Deusto and researcher in the field of education and human resources.

Therefore, parents and teachers must learn about and develop cognitive-emotional tools that allow us to identify patterns of behavior outside normal parameters, i.e., those that are harmful to the student themselves on a mental, physical, social, and emotional level, helping them to identify their true self and restoring their psychological structure for their proper and optimal development, because it is useless to have a bachelor's degree, master's degree, doctorate, etc., if they do not know how to relate to the world, making it vital to start with emotional education as a starting point.

Man exists only to be surpassed. "Man is a rope stretched between the beast and the superman—a rope over an abyss." Hence, his greatness lies in the fact that he is "a bridge and not a goal" and that what is to be loved in him is "that he is a transition and a twilight." Nietzsche.

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