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Cognitive sustainability and employees' wellbeing in a digital work environment

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Abstract

This paper seeks to reflect on sustainable human development, pointing to new areas requiring attention and relevant practices to enhance employees' effectiveness and wellbeing. When managing the complexity of the workplace, characterized by an intensified digitalization, employees need to improve their awareness of factors hindering and supporting their cognitive abilities. On the one hand, they should protect themselves from the intense pace of work and from the continuous interruptions from multiple sources, and on the other hand, they should invest time in nurturing their thinking through exposure to diversity and sustainable habits. Studies show that undivided attention and positive levels of energy are crucial to the health of people working in organizations.

Keywords: cognitive sustainability, wellbeing, multitasking, mental energy

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Introduction

The literatures on human development and sustainable development have long been separate. "This is surprising as human development is about enabling people to lead long, healthy, educated and fulfilling lives, and sustainable human development is about making sure that future generations can do the same" (Neumayer, 2012).
Here, we seek to focus on human sustainability, with particular attention to organizational settings and the new threats to people's welfare. The health status of the workforce is a particularly relevant indicator of human sustainability and wellbeing, as there is evidence that many organizational decisions about how firms reward and manage their employees have profound effects on human health and mortality (i.e. health insurance, layoffs, work hours, work-family conflict, work stress, job design, inequality, etc.). Each year the Great Place to Work Institute, in conjunction with Fortune, publishes a list of the best places to work. Most of the places are noted for their provision of good working conditions and benefits, including vacations, sick days, health insurance, training, and jobs that provide people with autonomy and challenges. Nevertheless, with an increased digitalization of the workplace and a higher flexibility of working hours, new indicators of employees' wellbeing should be taken into consideration.
A new way of looking at the convergence of cognitive computing and sustainability (Pilipczuk, 2020) is presented by Barzon (2018) in her article "Cognitive sustainability in Digital Experiences". She describes the conception of **cognitive sustainability** supported by information technologies. In fact, with the advent of cognitive and big data technologies, a re-contextualization of the ecology of mind (Bateson, 1972) has come about in these times of digital culture. The individual (cognizer), under constant and ever-increasing cognitive pressure from the multimodal overload of content, choices and interactions, will have difficulties in discerning sustainable pathways (Bruni, 2015).

Digital Stress & Nurture of the Mind

In modern everyday life, individuals experience an abundance of digital information and communication options, long with pressure to use them effectively and constantly. While there are many benefits attainable through the use of digital information and communication technologies, digital overuse needs to be explored as it may harm individual wellbeing. In addition, remote working arrangements and limited recreational options in times of social isolation, due to COVID 19, increase the risk of digital overuse for individuals. Its consequences can range from impaired mental health to issues of technology addiction.

In particular, there are two dangers for digital workers, which can be seen as two sides to the same coin. On one side, there is the risk of **cognitive overload**, when demands are greater than the person's mental abilities to cope with them, with too many inputs and contents to be processed simultaneously. On the other side, the specialization of work, easy access to information and desk-sitting habits might lead to a monotonous lifestyle; working on a single topic, spending several hours in front of a screen and interaction with a limited number of people lead to a **low level of mental energy and creativity**.

Does Multitasking Affect Productivity and Brain Health?

If we observe the daily routine of an employee, we notice that s/he is performing two or more tasks simultaneously, switching back and forth from one thing to another and performing several assignments in rapid succession. Multitasking might seem like we are accomplishing multiple things at the same time, but what we are really doing is quickly shifting our attention and focus from one thing to the next. "We don't multitask. We task switch" (Bates, 2018). Research has shown that our brains are not nearly as good at handling multiple tasks as we like to think they are. In fact, multitasking can reduce **productivity** by as much as 40%. Switching from one task to another makes it difficult to tune out distractions and can cause mental blocks, slowing down our work.

Attention is a mental resource that is needed to focus on and fully process important information, especially when there is a lot of distracting "noise" threatening to obscure the message. This type of inattention blindness can occur even in well-learned tasks, such as driving while talking on a cell phone. Understanding how attention works is clearly important, even for our everyday lives.

An important study has been conducted over the last decade by Stanford University to investigate the relationship between media multitasking and various domains of cognition, including **working memory** and attention. In conducting this analysis, Uncapher and Wagner (2018) noticed a trend emerging in the literature: people who frequently use many types of media at once, or heavy media multitaskers, performed significantly worse on simple memory tasks. Nevertheless, further research efforts are still needed to determine clearly how the mind and brain are shaped by different media use patterns.

What Recharges our Mind?

Metaphorically, it is appropriate to represent our mind as a battery that needs to be recharged every day. A great variety of resources can have a positive impact on our mental health, even though a comprehensive model to describe them is probably lacking. Experts from different fields have suggested strategies to develop new streams of energy for our mind and our body. Here, we attempt to summarize the main issues discussed, having identified two clear needs: 1. Careful planning of the daily schedule; 2. Leaving space for unforeseen and spontaneous events to happen.

1. Careful planning of the daily schedule

As a first example, a set of guidelines to improve the quality of work are described in the concept of **digital detoxing**, a practice that endorses deliberately limiting technology use to reduce digital involvement and physiological stress (Syvertsen & Enli, 2020). In times of social isolation, where the risk of digital overuse increases for remote workers, organizations should create a digital environment that supports employee satisfaction and mental health. In fact, many consumer-focused technologies have traditionally been designed to maximize user engagement with their products and services. More recently, several technology companies have begun to introduce **digital wellbeing features**, such as those for managing notifications and time spent, and for encouraging breaks in use.

As regards the frequency of interactions and speed of *stimuli*, **silence**, and in general the possibility to stop and **take a break**, is strongly encouraged by scientists. A 2011 University of Illinois study (Ariga & Lleras, 2011) found that the human brain's attentional resources drop off after a long period of focusing on a single task, decreasing our ability to focus and hindering performance. Taking regular breaks away from screens can also help to prevent computer vision syndrome, which commonly manifests as eye strain and headaches. Without planning sufficient breaks from work, employee productivity, mental well-being

and overall work performance begin to suffer. Overworked employees often deal with chronic stress that can easily lead to job burnout.

Moreover, when employees are busy and stressed, healthy habits – such as **eating nutritious meals, physical exercises**, and the **right amount of sleep** – can easily be discarded. Taking a proper lunch break gives the employee time to incorporate healthy habits into their normal working day, whether it is preparing and eating a meal, or running or walking outside. Even a 20-minute nap can clear space in the working memory for new information, and help the integration of new knowledge into the long-term memory.

2. Leaving space for unforeseen and spontaneous events to happen

Employees should plan their schedule, making sure they have moments to relax and letting **casual events** intrude on their daily routines. Informal conversation with co-workers, reading an interesting article, getting insights from people in the street, experiencing nature, dedicating time to a passion, or playing with kids, can foster creativity and can bring innovative contributions to the personal job. Top managers more commonly include in their calendar "walk-in slots", which colleagues can book to discuss various topics.

Having the possibility to meet people from different cultures and different backgrounds can also be functional in developing attitudes essential to success in modern organizations. In fact, **diversity management** is a recognizable source of **divergent thinking and innovation** and, if properly managed, can provide a basis for competitive advantage for international companies. In general, it is important to accept to be challenged and to face situations where our existing skills and perspectives are inadequate (Succi, 2020). Exposure to diverse experiences and diverse interactions is essential to fuel cognitive abilities in our society.

A good example of an activity creating positive energy and developing soft skills is **volunteering**. PricewaterhouseCoopers offers its staff six paid days off a year to participate in one of its voluntary programs; it has shown several benefits for managers' personal development (i.e., thinking outside the box, being aware of the needs of others, empathy, listening skills, and doing more with fewer resources).

Finally, **emotional engagement**, which derives mainly from the right balance between work and personal bonds, has a positive impact on the mental energy and performance of employees. In a recent study, diary data from 131 managers were collected and it was demonstrated that family-work conflict in one day positively influenced job burnout in the following day and *vice versa*, while family-work enrichment in one day positively influenced work engagement in the following day and *vice versa* (Haar et al. 2018).

Conclusion

This new need to improve cognitive sustainability by reducing mental stress and developing intellectual energy requires the commitment of individuals, teams and organizations at two levels:

- Observe and gain a higher **awareness** of the evolving dynamics of the modern workplace. It is important to identify the main factors hindering and supporting cognitive abilities and to design organizations in accordance.
- Accurate **management** of individual time and digital devices. Ideally, a comprehensive diary should be built including personal moments, energy rechargers and physical activities at the same level of work-related tasks and meetings.

Thus, if, in certain respects we need to protect ourselves by being defensive, in other areas, we should **go on the offensive** and develop strategies to nurture our mind proactively and effectively.

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