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Workplace learning during the covid-19 epidemic and digital transition

Introduction

Starting from the second half of the last decade, digitization and related Industry 4.0 programs have caused changes in the labor market structures of developed countries. As a result of the economic growth after the 2008 global crisis, the unemployment rate in the EU decreased to 6.2% as of December 2019, which was the lowest value since 2000. The further decrease was stopped only by the pandemic caused by COVID-19 (7.5% EU, December 2020), which initiated a new kind of reorganization in the world of work (Eurostat, 2019, 2021).

In addition to the labor shortage, companies face a new trend affecting all labor market segments. Unique needs and competencies are generated within existing workplaces. New types of workplaces have also been created (e.g., cloud-based technology managers and vaccine coordinators), requiring employees to have appropriate skills and advanced digital competencies. International research shows that transversal skills are becoming more valuable (WEF, 2022). The pandemic fundamentally changed the previous attitude to work and work (OECD, 2021).

National governments are trying to respond to the changing needs of companies by changing financial and regulatory conditions and with some level of education reforms. On the part of employers, competition has developed for employees with the appropriate skills and competencies. Therefore, they undertake career guidance, internal and company training, non-profit, science promotion activities, and benefits packages for young workers, such as housing support and flexible working.

New Approaches to Workplace Learning Research

In workplace learning, sociocultural conceptual perspectives, representing different research approaches, views, and directions, help understand informal workplace interactions. For example, Derrick and his co-authors (Derrick, 2022) reviewed two approaches that describe the relationship between creating the workplace environment and learning in its formal and informal forms. Bailey et al. attempted to grasp the complex and social nature of workplace learning et al. I., 2012) and the "Teaching-Learning Ecologies" approach, which observed the design engineering groups of three companies and the hardware engineering groups of three companies. The data revealed that the two sessions showed different patterns of learning episodes and that the actors showed a different distribution between the learning of each part of the course. Using Roger Barker's different Teaching-Learning Ecologies approach, after detailing the differences between the workplace ecosystems of the two groups of engineers, they showed how these differences emerged from behavioral patterns influenced by unique environmental and technological constraints. The study shows how actions transform environmental constraints into organizational structure and, with a synthetic and pragmatic approach to individual learning as a social activity, emphasizes the role of trainers in workplace learning and questions the existence of a universal model of individual workplace learning (Barker, 1963).

Fuller et al. (Fuller et al ., 2003), informal learning is not the purpose of the workplace. The workplace is artificially created where employees learn with or without structured and exceptional support. It introduces a profiling method consisting of twenty indicators to examine, compare, and evaluate different work environments, which can form a unique picture of the given work environment, the development of the organization, its ability to adapt to the external environment, and last but not least, the learning of the employees. This so-called "expansive-restrictive continuum" framework clearly shows the factors that promote or hinder the environmental conditions of learning, so the relationship between learning and workplace practice can be measured well.

Recontextualization can help employees understand how they make decisions about their workplace environment by encountering the problem and its solutions in different environments and situations. Practitioners constantly develop to meet the workplace's tasks, demands, and expectations. Observing this collective practice can be used to compare teamwork situations characterized by different degrees and intensities of remote work (Guile, 2014).

The "tacit pedagogy" as a system of interactive pedagogical thinking and actions is an essential dimension of the spread or obstruction of practical contexts (Fuller et al., 2006). For example, the effectiveness and sustainability of the measures created to support informal interactions between telecommuting employees were investigated in the case of telecommuting after the epidemic. The research was conducted using the tools of tacit pedagogy to explore the relationship between learning and innovation through workplace practice, examining the informal characteristics of the organizational culture and work processes supporting innovation and their relationship with the structural characteristics and procedures of the organization (Derrick, 2020).

The Economic and Social Dimensions of Telework

Thanks to high-value-added technological infrastructures in developed countries, the number of people joining the labor market from home or in non-traditional ways is increasing (ILO, 2021). The COVID-19 epidemic further increased the number of remote workers, and the majority of employers retained their flexibility in terms of working even with the end of the epidemic and the economic effects caused by the Ukrainian-Russian war, as this resulted in a certain degree of savings, simplified processes and also had a labor retention effect. Companies have also realized that in some cases, in addition to issuing long-term employee visas, they can employ their employees earlier and more easily involve "freelancers" in individual projects by ensuring online work.

With the pandemic physical distancing starting in 2020 (social distancing), innovative processes were also started in sectors less suitable for remote work, which allowed us to witness technological and methodological development.

As a result of the pandemic, in addition to ordering remote work, there was a typical trend of suspending work or terminating the employment relationship. Suspension or loss of work mainly affected people with lower education, blue-collar workers, people with limited health care, low-income people and people with few liquid assets, migrants, and people with disabilities (Galasso, 2020; Mongey et al., 2021; Vyas, 2022), and inequalities were also observed in terms of race (Ray & Ong, 2020). The research highlights that women were more exposed to work stoppages. In many cases, professions with over-representations of women, typically requiring more physical presence and interaction, were at risk (Brugiavini et al., 2021; Mongey et al., 2021). In addition to the continuous digitization and robotization of professions that require low education, the labor market shocks that occurred during the COVID-19 epidemic can thus further aggravate the existing inequalities (Vyas, 2022).

Based on representative research conducted in the USA by Salon et al. (2022), 40–50% of employees expect to telework at least a few times a month after the pandemic, compared to 24% before the pandemic. 90-95% of those who worked remotely for the first time during the pandemic plan to work this way regularly if they have the opportunity. Approximately half of the employees expect they will still be unable to work remotely. New telecommuters are demographically similar to those who telecommuted before COVID-19, and 66-75% of workers expect telecommuting post-pandemic to be unchanged from pre-COVID habits.

Informal interactions during telecommuting periods

The conditions of effective workplace teamwork have already been revealed by several empirical studies (Brown & Duguid, 2001). The rapid transition due to the epidemic changed teamwork, i.e., tasks, processes, and relational interactions. Surveys have shown that while some work functions have improved during remote work, others have significantly deteriorated. As a result, minor modifications and improvements were made to the work functions. In general, however, the awareness and

understanding of the importance of teamwork has increased. There were sectors, such as the banking sector, which, although they had actively used ICT tools in the past, still achieved better results from financial intermediaries who somehow remained physically connected to their clientele (Beunza, 2020).

Digital remote work also creates digital footprints, which are embodied in metadata. This data can help improve work processes but can also be a source of abuse. The collection of this data and big data processing from a research point of view is a new field in remote work research (Leonardi, 2021).

Informal interactions and workplace learning in remote work are examined by Hoff (2021) in a study in which he points out that workplace situations have become less stable and unpredictable during the pandemic. This is because control was often lost at the management level, leading to uncertainty at the organizational level. The role of psychological subjectivity, flexibility, self-esteem, and self-efficacy in professional identity has been strengthened, so more attention should be paid to this in the workplace.

These questions confirm how informal workplace interactions and learning are integral to organizational culture.

The impact of the COVID-19 epidemic on workplace learning

Organizations, jobs, and competencies during the pandemic

The strategy and future development opportunities of the companies were determined to a large extent by the crisis strategic decisions that redraw the network of relationships between the company and the company (Agarwal, 2021). There was no difference in the challenges of the leading human resources during the three waves of the pandemic; only their priority changed in the light of economic, political, and health restrictions and decisions. While in the first wave, the focus was on the development of workforce retention, communication, and remote work, the second phase focused on ensuring the administration and motivation of the workforce. In the case of the third wave, the optimal maintenance of the workforce came to the fore, while motivation and incentives came in third place. (Poór, 2021)

Pató and his co-authors (2021) examined the evolution of the jobs and competencies affected by the pandemic and measured job trends, layoffs, and changes in competencies. In the case of the third wave, the labor market trends initiated by the pandemic have already become visible. Based on the answers provided by the companies participating in the study, it is clear that workers in the hospitality industry (23%), trained workers (11.02%), workers in the field of logistics (9.32%), and salespeople (5.93%) was most affected by restrictions and the slowdown of the economy. We want to highlight healthcare workers, one of the most affected occupations (7.63%), and the regulations of the health crisis, the additional burden on care, caused several employees to leave their jobs. We can find outstanding tourism, hospitality, and warehouse trainee jobs data based on the sector-based division. By the third wave, the reserves needed to maintain the previous operation were used up, so it was necessary to eliminate jobs in the case of 33.05% of the responding organizations. Organizations (30.18%) required expanding jobs or creating new ones (e.g., IT, operator, courier, commercial area, volunteer nurse, COVID coordinator). The terminations and the creation of new jobs still took place in a ratio of 2:1, so an improvement was observed compared to the first and second waves (Pató et al., 2020).

The change in the necessary competencies extended not only to the workplace but also to private life, thus affecting almost the entire population. Based on the investigations of Dajnoki and Kun (Dajnoki & Kun, 2020), the demand for people working in IT and telecommunications increased while the demand for people with a lower education continued to fall. Soft skills, which helped in rapidly changing situations, were valued, while the skills belonging to the specialized field were relegated to the background. In the case of companies, a crisis management method has come into effect, in which competency development has become an essential tool for staying on the market and being competitive. The development of digital skills, especially learning to work in the online space, has become an expected basic competence, in addition to which human competencies such as teamwork, adaptability, stress management skills, conflict management, and emotional intelligence have been valued, which has been evaluated through employee training, flexible working hours, work. They

responded by supporting personal life balance. The scope of the new required competencies was already evident in the first wave. However, it was challenging for HR specialists to hold specific training courses online, measure homework performance, create an online recruitment system for the suddenly appearing surplus workforce, and retain critical people for the post-crisis reorganization period (Jenei et al., 2021).

The situation and changes in workplace learning at the individual level

During the pandemic, work was transferred to the home and workplace learning environments. This space is poorer because the opportunity to learn by watching others, in accidental and informal ways, and through socialization has largely been lost; creating the opportunity required much more conscious efforts. Due to its nature, informal and accidental learning was very typical as a means or result of problem-solving and crisis management since informal learning mostly comes to the fore when deficiencies arise that need to be remedied. Accidental learning is an activity whose primary purpose is not the learning itself but what coincides with solving a problem at work (Watkins & Marsick, 2021).

Formal learning situations could be created more easily with the various methods of distance education, but manual professions and occupations were also at a disadvantage. A study in Germany revealed that the proportion of online work-related learning for professional purposes increased during the early months of the pandemic compared to the previous period. Learning for purely professional purposes increased from 39% to 49%, learning for mixed personal and professional purposes increased from 13% to 17%, and learning for personal purposes decreased. As with the social aspects of remote work, the expansion of online learning has benefited highly qualified employees. Even before the pandemic, employees capable of remote work were more likely to participate in online learning than others. In addition, in the first months of the epidemic, the proportion of remote workers among online students increased significantly. Therefore, expanding online learning opportunities does not reduce inequalities in participation in adult education, but a kind of "Máté effect" can be observed (Kleinert et al., 2021).

The change during the pandemic was substantial in the education sector, so much research also focused on this sector. A small sample of Swedish qualitative research conducted among teachers reveals that the complexity of teachers' work and their commitment to informal learning have increased. Informal learning was primarily manifested in increased collegial cooperation, increased reflection on the possibilities and limitations of the digital work order, and increased problem-solving creativity. Moreover, social and practice-oriented informal learning activities contributed to the growth of teachers' digital competence, the expansion of teaching repertoires, and the awareness of the importance of learning environments (Holmgren, 2021).

Randall (Randall et al., 2022) showed that it is worthwhile for organizations to increase employee learning and development support and opportunities, even in times of crisis, as it significantly contributes to employee retention. The maintenance of workplace learning during online remote work is, therefore, still a priority task for the management of an organization, whether it is about operating informal or formal frameworks.

Workplace Learning at the organizational level: crisis learning

A crisis is a state of the organization when the situation calls into question its basic assumptions and goals and endangers its operation and even its survival. The crisis brings time pressure without the availability of tried and tested coping mechanisms in an ambiguous environment (Antonacopolou & Sheaffer, 2014). The learning mechanisms in crises differ from the usual ones, so it is worth examining their dynamics separately. In this context, we can conceptually speak of crisis-induced learning (a "lesson learning process" triggered by a crisis) (Deverell, 2009), or we can classify the phenomenon in the category of intercrisis (occurring during a crisis) or intracrisis (occurring between crisis episodes) category (Moynihan, 2009). This approach interprets the crisis as a displacement from the point of

balance. However, we can also find a primary position that considers the crisis as a natural element of the life of organizations, a necessary episode of learning and change (Antonacopolou & Sheaffer, 2014).

Empirical studies have established both the hindering and facilitating aspects of crises for learning (Deverell, 2009). According to Christianson et al. (2009), external shocks trigger learning in three ways: 1) act as audits of the existing response repertoire, 2) disrupt organizational routines and facilitate their redesign, and 3) shape organizational identity. Crisis experience is also helpful in new crises (Moynihan, 2008), as it improves the ability to recognize latent problems (Robin et al., 2019); that is, it broadens the scope of action possibilities and instills confidence in experimenting with new ways of thinking, acting and learning (Antonacopolou & Sheaffer, 2014). The crisis also creates a learning space that fosters partnerships across networks and sectors (Robin et al., 2019), and the involvement of external experts (Broekema et al., 2018) encourages the acquisition of significant Knowledge outside the organization and the creation of knowledge synergies.

Learning is blocked by the fact that experimental learning can be pushed back due to the high stakes of possible mistakes and the lack of experiences, processes, and technologies that could be relied on to promote learning. The degree of expected learning is more significant than in previous routine situations, but the focus narrows and limits information processing due to the crisis. Old, outdated answers are often recycled to solve new problems, or wrong lessons are learned based on previous Knowledge. Defense mechanisms (e.g., denial) may also come into play, ultimately preventing learning. In many cases, the problems that arise require actions not at the organizational level but at the inter-organizational level. Hence, a change in the level of learning is also necessary. Political constraints are typical if bargaining or opportunism leads to suboptimal decisions (Moynihan, 2008). First, previous routines must be unlearned to give way to appropriate practices in a crisis. However, once the crisis is over, most new practices, Knowledge, network connections, and other new knowledge capital are also forgotten (Robin et al., 2019).

Digital competence development is the main dowry of the pandemic

The pandemic forced the development of the digital competence of organizations and individuals on a scale never seen before. The concept of digital competence is used in connection with the use of the carriers of digital technologies, often called ICT literacy (information and communication technologies) and digital literacy. However, we can also talk about digital "skills," "abilities," "knowledge," "understanding," "dispositions," or even about "thinking" (Atchoarena et al., 2017). The concept of competence goes beyond the skills of interpretation and use implied by education, text comprehension, or thinking, as it includes elements of skill, Knowledge, and attitude (OECD, 2005).

Digital competence is the confident, critical, and creative use of ICT to achieve goals related to work, learning, leisure, and integration and participation in society. DigComp 2.2, as a citizen digital competence framework, is built from the following elements: (1) information and data literacy, (2) communication and collaboration, (3) digital content creation, (4) security, and (5) problem-solving.

Conclusion

The pandemic caused irreversible changes in our personal and work lives, which proportionally changed the place of work and workplace learning in the existing organizational framework. Most companies experienced this period as a crisis, which they were able to handle with appropriate strategic planning, choosing a crisis management method, and allocating resources (John-Eke & Eke, 2020). While some organizations drifted into the pandemic unprepared, others introduced innovative solutions, opening up new market opportunities, such as reducing administrative costs through digitization development or the rapid introduction of atypical forms of employment. At the level of employees, knowledge-carrying key people were once again valued, as they are part of the corporate memory, which was essential for the restart of organizations (Ramlall, 2004).

Workplace training played a crucial role in the accelerated transition and crisis management and, at the same time, made the organizations aware that specific training needed to be developed. In

contrast, others should be brought into the organization. Within workplace training, a new area was also brought to light, which is meant to treat everyday stress, anxiety, and loneliness. At the same time, however, the pandemic also increased the digital divide at the individual level, which could seriously affect even employees working in several work areas within the same organization, e.g., blue and white-collar workers of a company. There were more digitally developed and less developed sectors that were affected differently by the pandemic in terms of the ability to convert work into online remote work and the digital and technological preparedness of the sector. Accordingly, it is necessary to find solutions not only at the organizational level but also at the system level for the new challenges affecting workplace learning. It is also possible to observe both the intention to develop and to reorganize, which makes post-crisis and inter-crisis learning questionable and, at the same time, worth investigating at all examined levels.

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