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Remote Work Best Practises for Occupational Health and Safety Training

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Abstract

Along with other major changes determined by the Covid-19 pandemic, adaptation to the specifics of remote work generated a suite of challenges for both employers and employees. Therefore, studies on remote work best practices are essential to foster a healthy remote work environment and to strive for excellence in this type of work arrangement. Furthermore, occupational health and safety (OHS) remained a mandatory practice. The paper focuses on digitalisation of OHS trainings at Politehnica University of Timisoara (UPT) as a remote work best practice. This is a study on the impact and implications of the digitalisation of OHS trainings, in the context of legislative changes ruled in 2022 in Romania. The paper presents the methodology for the design and implementation of the OHS digitalised training in UPT. Additionally, the authors conducted a study on the awareness of the potential to digitise OHS trainings. Despite the prominent need for digitalisation across many organisational aspects, the study revealed that awareness on the possibility of fully digitalising OHS trainings is well below average. However, the impact of the best practise presented is the potential to extend the methodology to universities in Romania.

Keywords: remote work, best practises, occupational health and safety (OHS), online training, e-learning, digitalisation, electronic signature

INTRODUCTION

Implementing technological advances in industrial settings has been shown to ameliorate workplace hazards and improve occupational health and safety (OHS) conditions (Campero-Jurado et al., 2020). However, digitalisation of prevention activities, including OHS training activities, has not been sufficiently studied to date. There is limited research literature available on the importance and impact of digitalization in occupational health and safety, especially on the issue of digitalisation of OHS trainings. To an extent, the lack of interest in the subject can be supported, on the one hand, by the operational difficulties arising from an attempt of shifting the trainings from face-to-face to a digital platform, and, on the other hand, by the absence of specific regulation at national and European level in the past years. The introduction of such initiatives in the OHS legislation, especially in Romania, is a novel subject, and therefore the limited available literature is also caused by this factor.

The paper focusses on the emerging trend of digitalisation of OHS training in Romania, with a particular focus on the successful storey of hybrid OHS training in a Romanian university. Taking into account the positive outcomes of the proposed case study, the authors recommend it as a best practice in the context of remote work.

THE CONCEPTUAL AND RESEARCH CONTEXT

OHS in the digital era

Today, a major concern nowadays is how companies can adapt to technological disruption, as adaptation is a key competitive advantage (Trenerry et al., 2021). This leads to a discussion of the expanding gap between 'traditional' workplaces and new work arrangements, such as remote work and freelancing. There is no doubt that for the latter category online OHS trainings are the best-suited option, but for the first category of workers digitalization represents a process with a variety of challenges and costs. Various research articles proved that in the case of young workers, OHS and ergonomics online trainings were considered engaging and knowledge was successfully retained by trainees on the long term, building the case to benefit from online OHS trainings (Vukićević et al., 2021; Rohlman et al., 2021; Pithara et al., 2020; Aryal et al., 2019; Langley et al., 2016).

In 2022, the European Agency for Occupational Health and Safety at Work (EU-OSHA) launched a new campaign that is part of its "Healthy Workplaces" series; which is orientated towards OHS in the context of the European Digital Strategy. After all, this initiative is an acknowledgement of the impact that new technologies and intensive digitalisation have on management of OHS, at the same time as the necessity of adapting OHS to current work environments and particularities of digitalisation and telework (EU-OSHA).

EU-OSHA issued a report on trends and potential implications of digitalization and the use of ICT emerging technologies at a large scale. The main conclusion of the report is that new technologies such as robotics and artificial intelligence cloud computing, among others, are increasingly used in the EU, leading to dramatic changes in type, structure and timing of work (European Risk Observatory, 2018). Without any doubt, these changes will lead to challenges in multiple fields, including OHS, but at the moment it is very difficult to predict all these changes (EU-OSHA, 2017).

Digitalization of work comes with a series of legal complications. First, employees working on their own via a virtual platform lack human interaction and collaboration with their peers, making unionization a difficult matter; also, social isolation can lead to selfish behaviours that act against the proper implementation of OHS initiatives (European Risk Observatory, 2017). Finally, online workers may be considered self-employed and, as a consequence, they do not fall under certain OHS laws (European Risk Observatory, 2017).

An interesting perspective comes from De Asis et al. (2011), as online trainings are not suitable for all categories of employees. For example, workers with limited digital skills (such as construction workers) may not consider online training accessible or easy to use (De Assis et al., 2011). Therefore, an appropriate OHS training must be adjusted and customized for the target population, taking into account the level of education, digital skills and access to technology, among other aspects.

Nonetheless, online trainings have the disadvantage of potential poor achievement rate: trainees struggling or those who have questions might find it difficult to address their concerns if they do not have a face-face interaction with the trainer (Shendell et al., 2017). Also, online trainings can be difficult to finalize for certain students due to the virtual environment in which these take place, potentially leading to poor test results and diminished knowledge acquisition, in the end (Shendell et al., 2017). Furthermore, there are subjective (individual motivation, ownership, trainee self-efficacy) and objective (trainer skills, content quality, learning environment) factors that influence the success of the online training (Akther, Rahman, 2021). This is a very delicate matter, as OHS training must ensure awareness of risks and knowledge of safe behaviour during work. However, Chaves et al. (2015) presented digitalisation and knowledge management in the field of ergonomics and human factors as indissociable elements that merge into a larger system coexisting with organisational culture. This may be an indication of which companies are, in fact, ready for digitalisation of OHS and ergonomics, as they should have the experience and best practises to properly manage the process on training employees online.

Finally, Nguyen (2022) argues that digital transformation and the shift towards industry 4.0 cannot be made unless companies digitalize their operations, including OHS-related activities. In this context, more research on digitalisation of OHS training is mandatory to ensure a successful transition from pen-and-paper trainings to online platforms that will include electronic signatures of trainees along with the training content and testing activities (as required by law).

Remote work best practices

In recent years, triggered by the massive changes caused by the Covid-19 pandemic, remote work gained momentum and was increasingly adopted worldwide in numerous industries. Understood as a way of organizing work, remote work implies the execution of work tasks outside the physical premises of a company (Popescu et al., 2022). On the one hand, remote work is recognised to have benefits such as cost savings, work flexibility, and reduced carbon footprint (Draghici et al., 2022). On the other hand, this type of work organisation also revealed unwanted aspects, such as social inequalities and psychological negative outcomes (Draghici et al., 2022).

According to Pokojski et al. (2022), major challenges arising along with the implementation of remote work are organiser aspects, supervision and assessment of employee performance, and support provided to employees (in terms of equipment, training, and necessary resources). However, remote work

intensity was found to be strongly related to employee productivity (Cekuls et al., 2017). With adequate financial support and proper development of remote work skills, employees would benefit from better work performance and significant reduction in the negative implications of remote work.

Despite being such a popular work arrangement both in the pandemic and post-pandemic contexts, remote work still generates challenges for companies and employees. A solution to these challenges is the Erasmus+ project Virtual EDU ("Upskilling and certification scheme for virtual educators", project number 2022-1-RO01-KA220-HED-000086331) which aims to support remote work by training and certification of remote work educators in companies and universities. As part of this project, a collection of best practices for remote work was considered mandatory to support the creation of a training programme.

With regard to OHS trainings, the next section will detail on a remote work best practice in a Romanian university.

CASE STUDY – DIGITALISATION OF OHS TRAINING AT POLITEHNICA UNIVERSITY OF TIMISOARA, ROMANIA

Similarly, to many domains, the Covid-19 pandemic generated the context for rapid and intensive digitalization of mandatory OHS trainings. As university staff were no longer allowed to come physically to work, performing OHS training became very difficult and time-consuming. To solve this challenge, the OHS representative of the Faculty of Management in Production and Transportation at the Politehnica University of Timisoara (Romania) digitalised a large share of the mandatory OHS trainings for faculty staff, creating a hybrid training system.

As per Figure 1, employees (both teachers and administrative staff) received all training materials (Open Education Resources, OERs) by email to study individually. Furthermore, the employees received an online test to validate the acquired knowledge acquired (mandatory by law). Once the test was passed, the employees were asked to physically sign the training documents, as the law did not allow the use of a digital signature at that time.

However, the enactment of the latest legislation in Romania created the context to build a completely digitalised solution, since digital signatures are currently recognized and approved for OHS trainings. Therefore, the authors propose the conception of a learning management system for the provision of training materials and online testing, combined with the implementation of digital signatures for all employees.

Figure 2 indicates a detailed flow chart corresponding to the completely digitalized version of the OHS training. Of course, the investment would only make sense if it were implemented university-wise, with major benefits related to enabling employees to learn at their own pace and the potential of leveraging a variety of multimedia tools for improved quality of training. Table 1 presents the benefits and drawbacks of the current hybrid OHS training and the desired digitalised version.

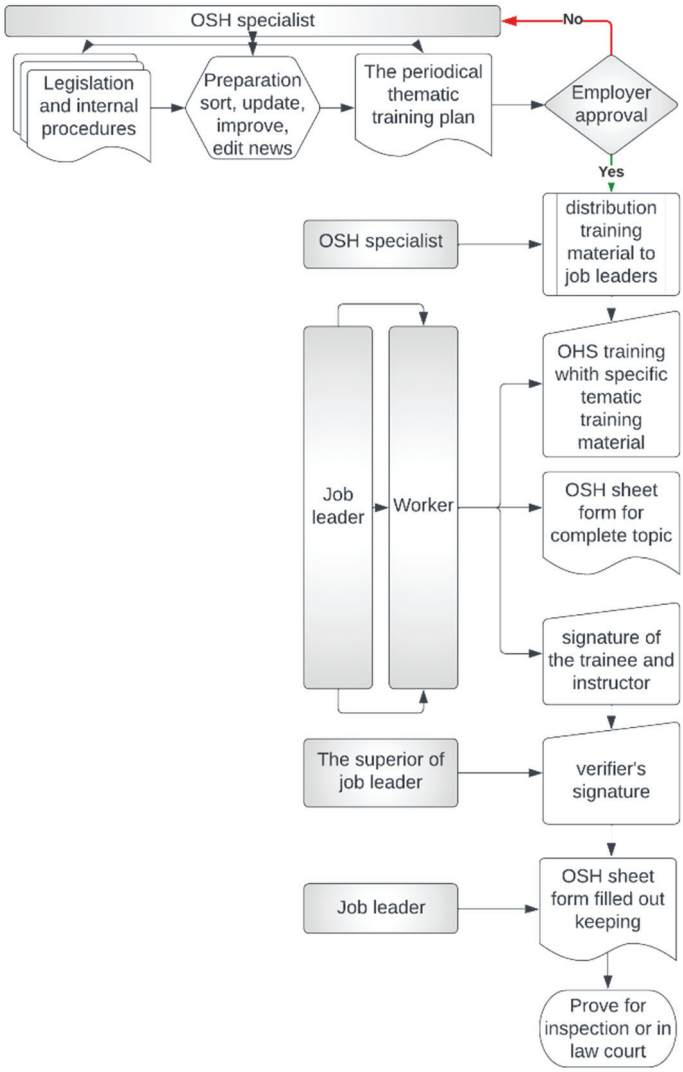
The digitalised OHS training at Politehnica University of Timisoara, Romania could be supported by the already existing solution for Massive Open Online Course (MOOC) which is UniCampus, https://unicampus.ro/ (the first MOOC solution developed in Romania). This is a virtual online platform for free open courses, for everyone. »UniCampus' vision is to strengthen the recognition of Romanian

universities, the power to support and reach into the economic, social, and educational life in Romania of quality, academic education, by promoting free access to knowledge«. The UniCampus platform is an open platform, similar with those solutions offered internationally by Coursera, EdX, FutureLearn, etc.

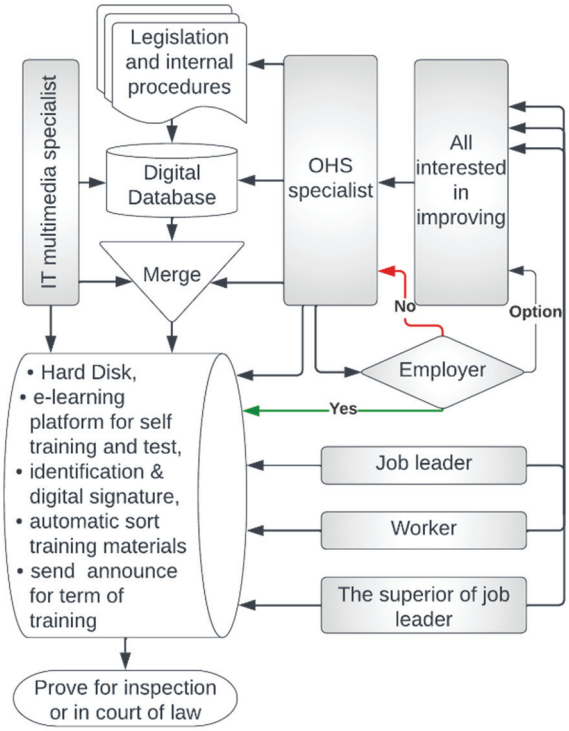
Table 1: Comparative analysis of the two procedures/approaches

Advantages and disadvantages of the approach	Current hybrid training	Digital training
Advantages	Learners study at their own pace.	Online trainings
	Digital training materials	Integrated Digital Solution
	Maintains the consultative character of OHS trainings	Electronic signature
		Integrated at the university level
	Removes the uncertainty of not doing the training	Economy of organisational resources: time (procedures), money (consumables).
		Facilitate participation in training improvement through attractive and award-winning referral access and automatic algorithmizing of training topics according to risk and training history.
Disadvances	Available only at faculty level	Requirement for investments in learning management system
	Involves physical signature	Necessity to implement face authentication system for testing

Picture 1: Flow chart of current hybrid OHS training



Picture 2: Flow chart of the desired digitalised OHS training, with digital signature



Without a doubt, the digitalised version of the OHS training would require an initial effort from the management and financial perspectives. Investments in an e-learning platform, digital signatures and development of online training materials are not negligible costs. However, the main benefits of OHS and ergonomic trainings were shown to reduce the impact of workplace risks and increase employee awareness of health and safety, as well as workplace wellbeing (Boatca et al., 2023).

At the same time, through the integrated digital system, participants can continue to train through notifications, requirements, and information. According to the principle of applying updated prevention, they will keep up with changing processes with implicit risks. Updating risk, as part of the OHS consultative participatory management goals, will increase workplace safety. Actively involving workers in flagging risks and proposing their own solutions through the e-learning platform (with similar access interfaces designed as social media platforms), increases workers' confidence that they are part of the system and not performing additional tasks, thus increasing safety culture and implicitly safety at workplaces (Gaureanu et al., 2019). In addition, any notification or proposal on the e-learning platform default becomes an asset, an intellectual capital of the institution that competes both for the intangible valorisation of the institution, and default competes for increasing the degree of job security (Gaureanu A. et.al. 2016).

CONCLUSIONS

The digitisation of OHS trainings is a driver for efficient compliance with requirements of national legislation across Europe, especially in the context of remote work. Although in the infancy phase, fully digitalised solutions were launched, in response to the need of companies for easy access integrated digital systems. In particular, the case of OHS training at Politehnica University of Timisoara, Romania, represents a best practise of remote work best practice. In an attempt to adapt to pandemic-related restrictions, the OHS representative of the Faculty of Management in Production and Transportation

created a hybrid model, where training and evaluation are performed using digital tools, and only the final document (training proof) is signed physically by the employees. The reason for the hybrid model was a legislative limitation that was eliminated in 2022, on the occasion of a Government Decision that allowed use of digital signature in OHS trainings. In this context, the authors propose an improved and completely digitalised version of OHS training.

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