

Approaches to support learning in today's workplace

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Abstract: Workplace learning supports acquiring knowledge and practical skills also to use up-to-date equipment by formal or informal methods and means and occurs mostly in the workplace. It contributes to learning of employees, employers and the organization as a whole. As a response to COVID-19 disease, workplace learning had to be changed. Companies need to consider Industry 4.0 to stay competitive in the market. Among the challenges regarding the transformation towards Industry 4.0 are requirements to re-skill the staff for the new work environment by using digital technologies. The staff has to adapt to the workplace transformation brought by digitalization, automation and robotic. So, learning at the workplace should be changed supporting cost-effective delivery modes, easy to access learning resources, and flexible learning environments. This paper aims to present first some existing forms, benefits and requirements of workplace learning as well as factors that are impacting the workplace and can support to drive a new approach to workplace learning. Second, some learning methods like interdisciplinary experiential ones, reflection as well lifelong learning (LLL) supported by digital technologies are proposed which can be applied within workplace learning.

Results about existing approaches in published papers, including the author ones, as well as of projects in this field have been used. Recherche has been done by the Study Group Lifelong Learning of the IAT, coordinated by the author. Finally, the methods described in this paper for workplace learning have been tested within an Erasmus+ project with participation of the author. The results should help managers, education responsible, employees to rethink their whole approach to workplace learning: the culture, tools, methods by adopting a new, modern understanding of what it means to learn at work by using digital technologies. The results should be tested also within other projects because due to changed situation during the Covid-19 and after it not all proposed approaches have been applied in optimal conditions. The factors driving workplace learning and the combination of described learning forms described in the paper have not been applied in this form until now.

Keywords: WORKPLACE LEARNING, DIGITALIZATION, INDUSTRY 4.0, INTERDISCIPLINARY EXPERIENTIAL LEARNING, REFLECTION, LIFELONG LEARNING

1. Introduction

Workplace is an important source of learning and workplace learning supports the acquisition of knowledge or skills by different methods and means that occur in the workplace. Due to rapid changes in companies, particularly in connection with COVID-19, digital technologies that have to be used and the need for reskilling people to achieve new knowledge and skills to cope with change; working should be increasingly interconnected with learning.

In the last months, work has changed, and it is not clear how it will return to the way before, in particular if remote working by using digital technologies will be more used in organizations. Digitalization will support this necessity. In this year about 40-50% of staff returned to their work offices and remote training and work will still need to take place. This situation is a great opportunity for companies to re-think their whole approach to learning and development to build and sustain a continuous company learning culture [26]. However, such changes will not happen tonight, and a number of steps are necessary to build this new world of workplace learning. Designing and delivering modern content and learning experiences in line with new ways of digital learning, working with managers to help them to support everyday learning individually and in work teams and groups are necessary [23]. Individuals should be helped to take responsibility for their own continuous self-development also by using lifelong learning supported by digital platforms, aligned with organizational objectives, adapted to the Industry 4.0 requirements and sharing their experiences so that the organization can benefit from it too.

In this presentation, first some existing forms, benefits and requirements of workplace learning are described as well as factors that are impacting the workplace and can support to drive a new approach to workplace learning. Second, some learning methods like interdisciplinary experiential ones, reflection as well lifelong learning, supported by digital technologies suitable to Industry 4.0 are proposed, which can be applied within workplace learning. Some of them have been tested by the Study Group Lifelong Learning of the IAT within a European project.

2. Workplace learning

Workplace learning takes place often within work-related interactions contributing to the learning of employees, employers and the organization as a whole [6]. Michael M. Lombardo and

Robert W. Eichinger model of learning shows that 70% of own learning comes from working on-the-job or from own experiences at the workplace, 20% of learning comes from observing, being coached and mentored by others, while 10% of learning comes from attending classes or formal learning programs (<https://trainingindustry.com/wiki/content-development/the-702010-model-for-learning-and-development/>).

Workplace learning is most informal and is often incorporated into workplace social interactions and everyday practices, but it can include also formal elements [25]. Formally qualifications can be acquired within learning structure organized for employees, in educational and training institutions and various communities within organizations. Both formal and informal learning may benefit either the organization or the individual or both [7, 23].

Workplace learning has also a 'culturally bound', meaning that the skills that an employee learns correspond to the requirements of tasks within the organization [25]. People learn from each other and through finding solutions for their day-to-day problems at the workplace [13, 17, 31]. In-house training organized in companies involve planned learning activities that take place near the job or outside work. Short training courses are organized at the workplace or information and communication approaches that have a learning element. Trainers are usually from the organization itself or from external entities. Taking different learning opportunities at work is a business imperative in order to improve and minimize time for business operations. Self-directed learning, networking, coaching and mentoring are some used forms [32]. Workplace learning takes place also within in-house training sessions and within lifelong learning (LLL) processes.

Lifelong learning is an educational philosophy changing rapidly particularly within digitalization in organizations. People believe that it is not too early or too late to learn, to change attitudes and to be open to new ideas and decisions. In order to survive/be successful due to many technological changes as well as disruptions like this due Covid-19, the existing and future workforce must be engaged, independently or with organizations in which they work, on continuous expansion and deepening of their own knowledge. LLL should be a part of daily life, helping i.e., employees to solve immediate problems, gain an understanding, or practice some specific skills [14]. Younger employees have a different relationship to learning than older generations, instead of asking they google and so they have access to an unlimited knowledge

base. The internet, then, acts as a form of lifelong learning. Companies, who recognize the benefits of training employees continuously, use digital technologies to provide employee lifelong training and make learning in the workplace accessible. Today, many employees no longer want to simply execute. They want to contribute to company development, want to learn. Beyond creating innovative products, many employees see corporations improving people's lives. These are some reasons why lifelong training is so important in workplace learning (<https://learning.linkedin.com/resources/workplace-learning-report-2018>).

Mentoring is an old approach supporting professional development and is associated with a specific goal in learning or working context aimed at improving performance to do a task in shorter time [8]. Kram [22] gives a theoretical foundation for understanding of mentoring relationships at work. Mentoring could be initiated formally or informally. Baugh and Fagenson-Eland [1] underlines that due to the characteristics of formal programs long term relationships are occur in such programs than in informal mentoring relationships. Scandura and Pellegrini [30] define e-mentoring as "the process of mentoring a protégé (mentee) over the Internet by a mentor usually not physically present at the protégés site or location". This is particularly important during and after the Covid-16 as well as to support the use of digital approaches. Mentoring relationships can be different during different phases of the relationship and evolve through phases that reflect different experiences and patterns of interactions. Both mentor and mentee should feel safe to express their feelings, to take risks and fulfill some requirements. Mentoring offers a number of benefits for workplace learning in companies. Research has shown a positive influence on mentee performance [18, 22]. Mentoring can address i.e., needs for timely, relevant training content, does not require significant personal and cost resources. Some benefits for companies are a quick introduction of new employees and support of integration of staff with special needs. Mentors can help to carry out an analysis in the company including existing knowledge gaps and staff reskills needs. Often companies need to strengthen their current market position before entering international markets with new products or strategies and need help in this transition; mentors can help companies to prepare a new workplace learning plan and guide them in implementing this.

3. Factors driving workplace learning

As a response to COVID-19 disease, workplace learning had to be changed and many usual activities in this context have been postponed or canceled. Taking into consideration the needs for employee's reskilling in order to assure social distancing but also to cope with digital transformation, a new approach to workplace learning is necessary [18, 20]. One factor impacting the workplace learning in this context is digitalization. Microsoft explains "The exponential growth of digital connectivity, devices and information is driving profound changes in the way we work, all around the world ..." (<https://www.microsoft.com/en-us/worklab/>).

Referring workplace learning terms, it means not only converting classroom training into e-learning – as Microsoft explains. "In order to survive in this world, companies need to rethink everything from culture to tools and environments." Managers and employees need to rethink its whole approach to workplace learning by adopting also a new, modern understanding of what it means to learn at work by using digital technologies under following requirements (<https://modernworkplacelearning.com/magazine/5-factors-driving-modern-workplace-learning/>):

Changing learning habits

It is known that individuals do not longer rely on being trained as the only way to learn for work, but they learn as they do their work as well through their interactions with colleagues, clients, their manager, a coach or mentor. They use the Web not only to

access online courses, but also for resources in different formats, i.e., videos, as well as by building their professional networks of connections from around the world on social networks (like Twitter, LinkedIn). Maturity Learner's Voice report showed that employees like to be in charge of how they learn, with 91% wanting to learn at their own pace and 82% knowing what they need to learn in order to do their job (<https://emeraldworks.com/research-and-reports/workplace-learning/learner-voice-part-3>). It requires from manager to support employees by using lifelong learning approaches and actively encouraging them to find their other own solutions to their learning and performance problems in the ways that suit them best. This is particularly important also due to:

Multi-generational workplace

Different attitudes to work and learning of each of these generations are already known in particular their use of new technologies. It is not possible to create resources in multiple formats to meet everyone's preferences, but it is necessary to support flexibility and autonomy so that individuals can build their own learning experiences in the way that suits them best. This is important also because of

Exponential information growth

Huge amounts of data are being created every day. Knowledge should be updated, and skills are quickly going out of date. In the past, individuals were trained once to do their jobs and their whole careers. Nowadays job roles became more sophisticated, new technology or procedures were introduced so that training became a continuous requirement to improve people knowledge, skills, and competences. It means not always adopting a new approach for training but recognizing that everyone needs to keep themselves up to date learning and develop new skills and expertise in the ways that best suit them, encouraged and supported by own manager.

Necessity for a Social Ecological Perspective in learning

The social ecological perspective is based on the assumption that many factors from environment come together to create the unique circumstances that shape who people are, seeking to promote the idea that they all are interdependent but must handle society's issues in ways that consider all parts of a functional system (<https://courses.lumenlearning.com/sociology/chapter/theoretical-perspectives-on-education/>).

Social ecology looks at the changing relationship between different parts of society, the role to play in keeping the system healthy and stable. Applying these principles in workplace learning means people, particularly social workers; they get a better picture of how the system and new digital developments affect different groups of people, particularly these with special needs. So, people are in a better position to change and do their job well.

Understand the significance of lifelong learning

LinkedIn's 2018 Workplace Learning Report showed that continuous learning in the workplace has never been so important for today's workforce (<https://learning.linkedin.com/resources/workplace-learning-report-2018>). Particularly younger employees are interested in lifelong learning and seek development opportunities at work. They look for jobs that can help them pursue professional growth and development. That is why companies who acknowledge the benefits of training employees and support their individual learning attract them.

4. Some learning approaches in workplace learning and support of digital technologies

Interdisciplinary and experiential approaches are two innovative learning formats, which can be used also in workplace learning. Interdisciplinary approach to education combines two or more disciplines while experiential education provides opportunity to

apply theoretical concepts into practice. The combination of these two learning methods can improve also the workplace learning.

Geertz [15], identifies the boundaries between the two approaches and notes the "more and more we see ourselves surrounded by a vast, almost continuous field of variously intended and diversely constructed works we can order only practically, relationally and as our purposes prompt us". Life is complex and multidimensional so that educational approaches should reflect and respond to this reality. Interdisciplinary approaches to teaching are used within higher education [10, 16], but not much within projects in workplace learning. In an interdisciplinary project, learners from different departments could integrate information from different subject areas; it provides learners with a deeper understanding or solutions from different perspectives. Learners develop an interdisciplinary understanding and try to integrate own work expertise and discipline-specific ways of thinking, which increase cognitive abilities and critical thinking [3].

Experiential learning takes place when a person is involved in an activity, looks back, reflect and evaluates it, determines what was useful or important to remember, uses this information to perform another activity [9, 21]. This process involves learners in experiments and encourages shared experiences, allowing learners to apply acquired knowledge in particular situations. The adaptation and integration of the experiential approach led to an effective learning of participants in different fields including management and entrepreneurship [2]. The four stages of experiential learning theory concrete learning, reflective observation, abstract conceptualization, and active experimentation could be used in workplace learning. The first two stages of the cycle involve achieving experience, the second two focus on transforming an experience. Experiential learning can be digital supported i.e., through a combination of synchronous tools such as a web conference, asynchronous tools such as discussion forums and/or social media for group work, and e-portfolios and multimedia for reporting. Combining traditional training methods and experiential ones engages students and helps them to apply knowledge acquired in the interdisciplinary learning process to real-world situations. Some requirements for efficient experiential learning process are the followings (<https://www.abacademies.org/articles/experiential-interdisciplinary-approach-to-teaching-a-case-of-collaboration-between-entrepreneurship-and-media-production-7006.html>):

It is necessary that instructor has experience to support the learner doing or performing an activity [11]. This allows the student to apply and practice the knowledge achieved from instructor through an experience i.e., a management project.

Learners must be engaged in a reflection stage, allowing them to process the experience through discussion and analysis, sharing observations about their conclusions [12, 28]. Reflection on the experience is an important exercise in determining what went well, what it needs improvement. The reflection stage provides a basis for the application or conceptualization phase [4, 27].

Learners should have the opportunity to expand their understanding of the applied concepts enforcing their experience through generalizations and applications to other potential experiences [5].

These requirements will allow students to learn during the process to solve problems in the workplace and to experience synthesizing information from multiple perspectives; an interdisciplinary approach and experiential learning should be used together.

5. Digital support of lifelong learning

Digital developments, social distance due to Covid-19 and disruption of education methods encourage the use of digital platforms for lifelong learning – digital lifelong learning. Some important factors at the development of learning materials for digital LL are:

- advantages and problems with digital technologies,
- the attitude and motivation of students towards learning a specific topic,
- digital skills of educators in the use of technology,
- structure of content that need to be adopted, the interaction that occurs between students and teachers, as well as among students [24].

In order to promote the use of digital learning, emphasis should be on technology and also on "experience while using," "inclusion," and other general important factors for the successful acquisition of knowledge. In order to use the benefits of lifelong learning within workplace, it is important not only to connect it with different forms of learning – formal, informal, not formal and to apply digital technologies but to assure for it a practical content easily applied in practice [29].

Digital lifelong learning requires, besides motivation and needs of learners, the right technology i.e., platforms like Learnworlds, Kajabi, Teachable and Thinkific that offer integrative solutions. There are tutorials available for how to create and use online learning platforms effectively for lifelong learning engaging students for technical, marketing and selling aspects. Some lessons while creating an own lifelong digital platform are the following (<https://www.forbes.com/sites/jeroenkraaijenbrink/2020/09/04/us-in-g-covid-19-as-catalyst-for-lifelong-e-learning/?sh=559043b77e42>):

- Focus on an area of expertise
- Facilitate the emergence of an active community
- Assume directed need-driven learning and undirected curiosity-driven learning.
- Facilitate one-time learning and continuous applications.

One value of lifelong learning in workplace learning is the possibility to apply what is learned when it is needed and exploit it when there is an opportunity within work or life. This requires access of employees to useful digital tools, materials and a community that learners can use when they need. Needs, means, environments are important for digital lifelong learning. Covid-19 serves as a strong catalyst for the necessary global reskilling within workplace by using digital lifelong learning. Unfortunately, due to closed education institutions and of some companies as well lack of corresponding research results, the digital lifelong learning could not be used efficiently within the workplace until now. Due to the Covid-19 crisis, this being a recent and ongoing event, future research on digital lifelong learning within workplace learning is necessary. More studies are also needed on teaching and learning innovations that have resulted from the Covid-19 crisis. This includes focusing on different ways employers, instructors have fostered an inclusive digital learning environment and digital tools within workplace learning.

5. Example

Within a European Erasmus+ project, a digital program supported by an interactive digital platform for workplace learning within small and medium sized companies (SMEs), particularly to achieve work necessary research skills and motivate learners to involve in lifelong learning, has been developed and tested [19, 20]. The proposed model involved an interplay between inter organizational, organizational and individual learning at each stage of the project. Interdisciplinary, experiential learning should be tested. It was planned to involve employees working with their peers and external business partners to actively seek business opportunities, actively plan and implement solutions, actively investigate these and actively reflect on the impact of these in professional, social, cultural and economic contexts. Interdisciplinary small teams (3-4 people from different departments of each participant company) had to develop and test an own research project connected with their work and including social ecological aspects. The topics for the projects have been chosen to benefit also the company because SMEs have no

resources for research. Participants should reflect on the findings and learn from these by identifying future opportunities for their own workplace. A mentor from each Erasmus+ partner country having knowledge in experiential learning helped employees in their projects. Discussion forums have been developed for each learning module, supported by mentors. Participants have been helped to use LLL for completing their projects.

A short time after starting the program, some companies have been closed due to the COVID-19 pandemic and experiential planned methods and cooperation established at the beginning have to be adapted. Some of the groups did not continue their work. Five groups from German SMEs (each of 4 people) finished their small projects. Two of the groups considered socio ecological aspects in their projects, employees from all groups were between 25 and 64 years old. Finally, each group developed an e-portfolio of work to allow them to progress own individual careers based on the learnings identified in the Evaluation Map and a Future Research Plan. The Evaluation Map included a detailed assessment of the issue, the drivers for change, input from internal and external stakeholders, key implementation steps taken, and outcomes achieved. Included in this portfolio is a Reflective Learning Journal that is an account of the learning journey through the program. Reflective learning journals provide a place for learners to record observations of occurrences that happen to and around them, as well as the surroundings in which these events occur. Journals enable learners to identify key aspects that are important to them and help learners to use previous learned material. The final stage of reflective cycle, the Action plan, examines anything need to be known and to improve for next time. The e-portfolio, which students developed, is an on-line compilation of materials that exemplifies beliefs, skills, qualifications, education, training and experiences during the project.

The participants appreciated the importance of reflection on research impact and of portfolio development, they could better integrate learnings and work with improved awareness and confidence. They affirmed that reflective practice also helped them to develop lifelong skills like creative thinking skills, cooperation and decision making, encouraged and motivated them in using lifelong learning to finish their research projects.

6. Conclusions

Workplace learning is a mean of improving the skills of employees and enhancing their knowledge formal or informal. Managers, education responsible, employees need to rethink their whole approach to workplace learning by adopting a new, modern understanding to learn at work by using digital technologies. Active learning in the form of experiential interdisciplinary projects make the workplace learning more engaging for instructor, learners, mentors and contribute to develop learners' communication skills, teamwork ability, creativity and critical thinking. The interdisciplinary experiential model implies that learning becomes a process whereby knowledge is created through the transformation of various experiences acquired by learners, instructors, mentors, through the interaction between various parties involved in the educational process. Reflection provides learners with motivation and enjoy the process of learning because they reflect on their thoughts, feelings and emotions Continuous learning in the workplace i.e., within digital lifelong learning has never been so important for today's workforce as now.

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