How can Digital Media Literacy be Further Integrated in Team and Distance Work Structures and Practices in Order to Support Effective, Stimulating and Meaningful Ways of Working?

Executive Summary

Digital technology has become ubiquitous in the workplace, especially for office workers. So-called «new ways of working» have gradually emerged, enabled by technological, organizational and societal developments. As distance collaboration is becoming increasingly common, it raises a number of critical questions. How does the organizational design evolve to accommodate and support this transformation? What are the key changes in the individual and team work practices? What competences do workers need in these new work environments? And how do the associated discursive changes impact on the practices and subjectivities of office workers? This working paper presents the results of LITME@WORK, a 4-year research project that addressed these changes through the lens of digital media literacy (DML) for office work, focusing on teamwork and distance work.

Specifically, LITME@WORK delivers as main research results:

- a research framework for analyzing the many aspects of digital media literacy in distance teamwork practices and environments, ranging from the organizational and team structures to the point of view of individual workers themselves;
- an in-depth analysis of the ways organizations understand and negotiate the "(digitally) competent worker";
- an up-to-date description of the changing office work competences, practices, cultures and organizational structures, with a focus on teamwork and distance work trends;
- a conceptual map of DML competences aimed at serving as a resource for societal and policy stakeholders in terms of defining, evaluating, monitoring, recognizing and supporting DML in office work.

This working paper is the result of a four-year research project (2015-2019) funded by the Belgian Science Policy Office (BELSPO – <http://www.belspo.be/>) and its Brain-be program (contract n° BR/143/A5/LITME@WORK). The full results of this research project are presented in the book Digital Media Literacy in Teamwork and Distance Work: Competences, Discourse and Organizational Design (Presses Universitaires de Namur, 2019). An electronic version of this book is openly accessible at https://www.belspo.be/belspo/brain-be/themes_5_Social_en.stm#LITMEWORK and www.litmeatwork.be.

Context and research questions

Processes and services are increasingly digitalized, allowing paperless work and changing ways of working. The digitalization of organizations implies a wide diffusion of Information and Communication Technologies (ICT). It also enables the implementation of distance work. So-called NWOW projects (New Ways of Working) involve new flexible workspace configurations, with less workstations, and no fixed allocation of desks to individuals. These changes imply the development of mobile work inside workspaces but also outside, in coworking spaces, for example, or at home. Collaboration at a distance has become increasingly common over the years but it also raises questions regarding the evolution of the infrastructures provided by organizations, the changing ways through which work is organized for individuals and teams, the complex relationship between one's professional activity and private life, and the new set of competences that workers need to have. These transformations cross all sectors and are visible in both public and private organizations.

Changing ways of working require a new range of technical, social and communicative competences. These competences have been the focus of the LITME@WORK project, which has investigated digital media literacy (DML) for teamwork and distance work from three different but complementary perspectives:

- a practice-oriented perspective focusing on the relationship between digital media uses and competences in employees' new work practices;

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The perspectives of the LITME@WORK project.

- an organizational design perspective focusing on the relationship between work organization, workplace design and structural conditions for (DML) competence utilization and learning;
- a discourse-analytical perspective focusing on the sense-making processes office workers rely on when they conceptualize work and (DML) competences in organizations transitioning to new ways of working.

The LITME@WORK project studied ten Belgian organizations that took measures to enhance ICT-supported distance teamwork. The selected cases represent a variety of work contexts that can be distinguished on the basis of parameters such as the public/private distinction, the sector of activity (e.g. IT, health, transportation, insurance) and the size of the organization.

Main Findings

A framework to identify professional collaborative activities and their dimensions calling for digital media competences

		Dimensions					
Area	**Activity**	**Tasks**	**Time**	**Space/Distance**	**Information**	**Technology**	**People**
Interdependent Tasks							
	Collectively allocating tasks (coordination work)						
	Implementing tasks interdependency (cooperation work)						
Team Meetings							
	Organizing team meetings (coordination work)						
	Meeting with the team members (cooperation work)						
Remote Communication							
	Organizing means of communication (coordination work)						
	Communicating with coworkers (cooperation work)						
Information Spaces							
	Organizing shared information spaces (coordination work)						
	Sharing information in dedicated spaces (cooperation work)						
Document Production							
	Organizing the collective authoring of a document (coordination work)						
	Authoring a document collectively (cooperation work)						

A matrix definition of digital media literacy competences of distance collaboration

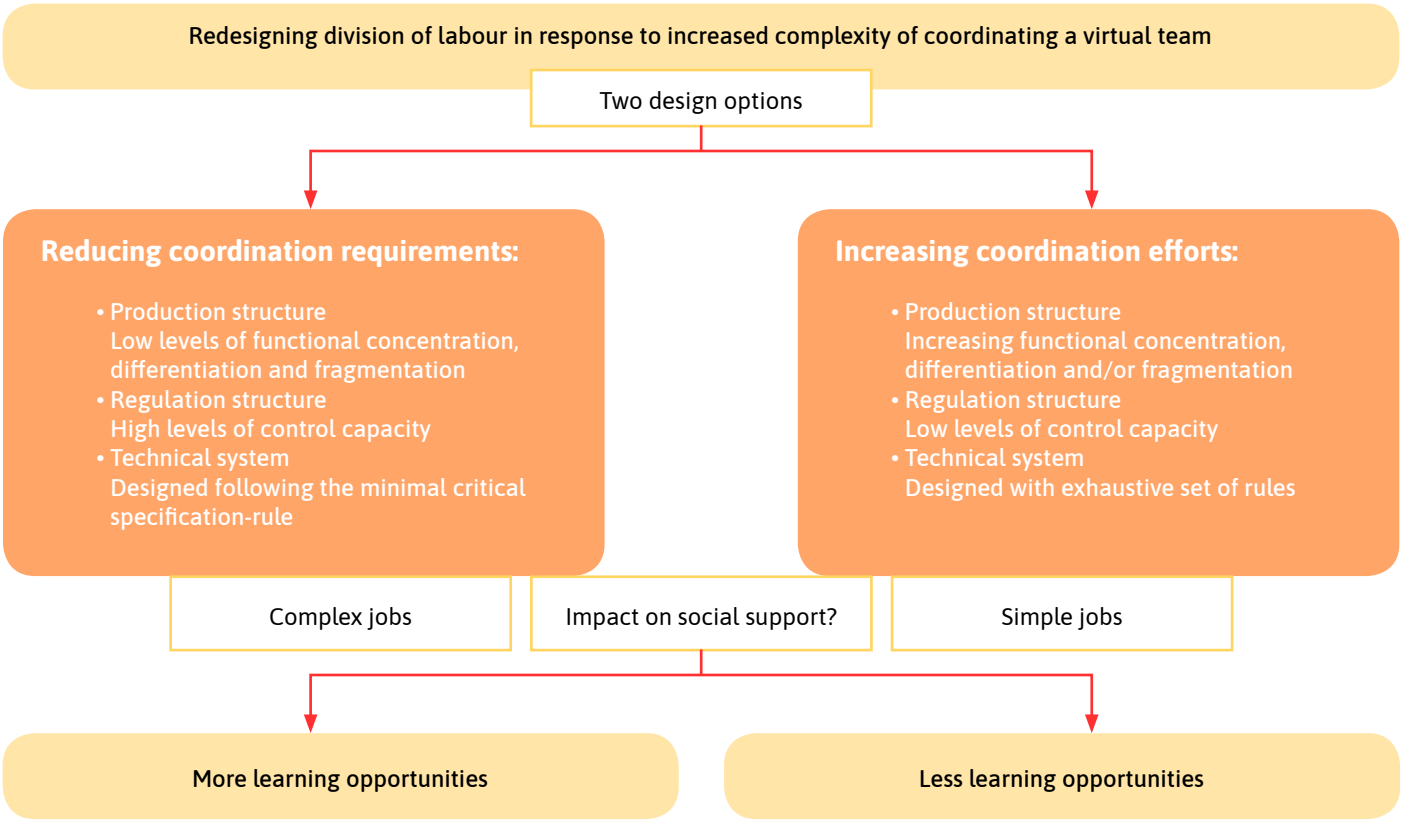
ICT-supported collaborative work (be it performed face-to-face or at a distance) can be mapped onto five expansive activity areas: interrelated tasks, team meetings, remote communication between team members, shared information spaces and collective document production. Each of these activity areas involves both coordination competences (leading workers to prepare collective work by setting rules, designing mechanisms and configuring

tools for collaboration), and cooperation competences (supporting workers during actual collaborative work situations, which often involve the adjustment of the rules, mechanisms and tools). For example, within the "team meeting" activity area, workers need to develop digital media competences related to both the activity of organizing team meeting and attending team meetings. The development of these two interrelated aspects of collaborative competences is a key to support adaptive and long-lasting distant teamwork.

Competent distant collaborators are able to consider how each of these activities involves different elements related to tasks, time, space, information, technologies and people. Digital media competent workers are able to face novel and complex situations related to technology-supported distant teamwork. This process relies on workers' reflexivity, which involves their ability to frame distant collaborative situations they're engaged in and to adopt a fitting conduct, should it be procedural or creative. By conceiving the interconnections between these six dimensions within each collaborative activity, coworkers develop relevant practices that solve problematic distant collaborative situations. The relative complexity of their understanding of collaborative situations, and of their associated conducts are a constitutive part of their digital media literacy.

In situations of distant teamwork, digital media competences are not only about individual worker's perspective and actions but are based on the ability of a team to share a common understanding of a variety of problem-situations and to take competent and concerted collective actions to solve them.

Understanding the division of labor within and between teams to identify learning opportunities



Two design options of virtual teams and their impact on learning opportunities

The opportunities to develop digital media competences are related to the division of labour of a virtual team. To optimise learning opportunities, organizations are advised to (I) integrate tasks such that challenging task packages are created, and (II) bring team members' control capacity to a level where they can solve the disturbances they encounter themselves and to organize their own work. Finally, we recommend paying attention to the support and feedback team members enjoy in their team, as a possible source of learning opportunities.

In addition, coordinating teamwork in virtual environments is more complex compared to collocated collaboration. A team's division of labour determines the coordination requirements and also the opportunities to respond to these. Organizations should at least reflect on and preferably deliberately consider redesigning a team's division of labour when introducing virtual teamwork to cope with this additional coordination complexity.

According to the two-wave survey with the employees of the organizations involved in the study, as team members started engaging in more teleworking, knowledge sharing decreased. This is probably because spontaneous conversations are more scarce when teams are geographically dispersed. Indeed, in such a situation, team members can only initiate conversations deliberately, which could create a threshold. To buffer or even counter this effect, we identified three possible interventions that managers could implement. First, they could encourage virtual communications among team members, which seems to be a good alternative for face-to-face conversations when used in moderation. Second, they could foster trust among team members, for example by setting team goals instead of individual goals, which enables skill development. Finally, managers would do well to make sure that every member of a team teleworks for more or less the same amount of time (as large differences potentially lead to perceptions of inequity).

The changing meaning of office work in NWOW cultures

The findings of the critical discourse analysis (28 interviews with 29 people) show that the introduction of so-called NWOW and similar (re)configurations of office work in public and private organizations have had an impact on the way office workers and managers see themselves, each other and their work.

This precise nature of this impact depends on the interpretative logics workers rely on in order to make sense of NWOW. Our analysis allowed us to identify seven logics: (1) a neoliberal logic, with an emphasis on management by results and management of the self; (2) a humanizing logic, with an emphasis on wellbeing at work; (3) an expressive/consultative logic that stresses the importance of listening to and consulting with workers in the transition to and evaluation of NWOW; (4) a team-oriented participatory logic, valuing collective decision-making at the team level; (5) a pseudo-participatory logic, criticizing autocratic decisions and leadership in the transition to NWOW culture; (6) an authoritative logic, stressing the need for leadership by example and accepting some degree of authoritative decision-making, and (7) a public service logic according to which delivering qualitative public service to 'citizens' rather than to 'clients' should be a top value in office work.

There are many conflicting interpretations within public and private organizations regarding the positive and negative effects of NWOW. While some office workers simply reproduce celebratory NWOW discourse, others take a more nuanced and critical stance, even if they rarely oppose the central principles of NWOW. Many office workers identified real and/or potential perverse effects of NWOW programs on physical, psychological and/or social wellbeing. There were also many implicit pleas for a realistic and pragmatic take on talking about and implementing NWOW in organisations. Many interviewees took issue with managers who merely paid lip service to values such as participation and consultation in the transition process to NWOW. While some workers embrace a relatively authoritative leadership style in such change processes, many others feel less than enthusiastic about pseudo-participative management strategies. Yet truly oppositional critiques were hardly voiced in our interviews with office workers. Our office workers usually supported and/or accepted the implementation of NWOW programs. Those who acknowledged potential perverse effects of NWOW tended to see these effects as avoidable. They did not tend to call the principles and aims of NWOW into question.

The rarity of truly oppositional critiques can be explained if one considers that NWOW discourse is constructed around a set of values with strong positive connotations such as 'autonomy' or 'trust'. Advocates of NWOW also list a series of positive effects NWOW on social wellbeing. This makes it difficult to challenge celebratory NWOW discourse. Another reason behind the success of the celebratory NWOW discourse is the opposition between 'old' and 'new' office cultures and/or office workers. The 'new'

office worker is seens as the embodiment of 'happy' values and competences such as autonomy, trust or flexibility. The 'old' worker is seen as a rigid administrative or bureaucratic pencil pusher who is supposed to change his or her identity and way of working, or to phase out of the organisation. Like the frequent expression of happy values in NWOW discourse, this manichean opposition between two types of office worker can lead managers to dismiss concerns and problems linked to the implementation of NWOW in public and private organizations.

When talking about the kind of competences required in today's office work, our interviewees used the notion of competence in a general manner, conflating 'competences' with a range of abstract values rather than considering competences as descriptors for practical abilities or professional norms. The notion of competence was used as a fuzzy term by most office workers. Being competent can mean that one has technological know-how, that one has the ability to learn, but also that one is humble, flexible and/or adaptable. The way such terms are interpreted varies strongly depending on the interpretive logics office workers rely on in order to make sense of their themselves and their work. For instance, those who rely heavily on a humanizing logic tend to conceptualize NWOW competences in terms of a series of 'soft' or 'social' skills such as 'being open' or 'being nice'. Yet explicit struggles over the meaning of 'competence' were not observed in our interviews, which is a further indication that NWOW discourse has achieved a high degree of hegemonization. In spite of the fuzziness of '(DML) competence', nobody wants to be seen as incompetent. As such the term performs a legitimizing function for many NWOW programs.

Seven recommendations to foster DML at work

For those who seek to foster DML at work, the following insights can be derived from LITME@WORK:

1. Treat competences as abilities to perform particular practices rather than abstract values

The fact that many managers and/or employees talk about competences in abstract rather than concrete terms can lead to confusion about the exact meaning of terms such as «autonomy», «flexibility», «sociability» or «agility». Unqualified use of such terms can lead to contradictions in job descriptions and job requirements because it hinders an objectified account of what a job entails. It may also lead to an inconsistent division of responsibilities between the individual employee and the organization. We therefore suggest that HRM should work with clear definitions of competences that allow for measurement and evaluation of concrete abilities and practices. The matrix presented above provides a sound basis for developing such an understanding of competences.

2. Use the DML matrix in a reflexive way

The DML matrix provides a precise understanding of digital media competences. We encourage managers and policy makers to use this matrix as a map rather than as a recipe. It is a map that can help to plan for training or evaluation purposes. This implies that workers, teams and management should create their own itineraries and adapt the matrix to their specific work contexts and objectives. This adaptation should prevent three pitfalls:

- a reductionist approach which would assume that in every situation, every worker or team should be able to perform all the activities listed in the matrix and integrate all six dimensions in the way they frame the associated work situation
- a context-blind approach which would adopt the matrix without taking into account the specific work situations and the objectives of the workers. The adequacy of activities and dimensions should be assessed on a case-by-case basis.
- a compartmentalized approach that considers each cell in the matrix as disconnected from the others. Competences are by nature integrative and rely on connections between multiple activities and dimensions.

In any case, this matrix should be used as a tool for both practitioners and co-workers to increase their reflexivity with respect to collaborative work situations. Creating this shared reflexivity is a key factor in the process of developing DML at work.

3. (Re)consider the design of teams as a strategic factor for organizations

In order to support learning in virtual teams, and to foster an effective, meaningful and stimulating working environment, it is essential to assess the tasks of team members explicitly and critically. Our results show high variation in the learning opportunities and psycho-social risks for the workers involved in virtual teams. This variation is related to the way the

tasks in virtual teams are designed and the opportunities this offers to deal with increased coordination requirements that are associated with collaboration at a distance. Due to the division of labor between and within teams and the use of ICT to collaborate at a distance, the risk of disturbances in the workflow increases. At the same time the scope and means to solve these disturbances decrease. This means that the coordination of the work of virtual teams becomes both more important and more complex.

In addition, our study shows that technology used to enable distance collaboration is not supportive by default and can even add to the complexities of coordinating work. Technical systems are indeed prone to technical errors and can hinder rather than improve a team's coordination. It appeared that it is important to discuss the tools to be used when settling down a team, and the roles (access, ownership, function) gravitating around the tools. It is an illusion to think that implementing technical tools will automatically create team spirit and collaborative work.

In sum, it is necessary to take the time to critically assess who does what in the team, who needs to collaborate when and with whom and what technical tools can support this collaboration. Low levels of division of labor and sufficient autonomy for team members are most conducive to support team members in coping with the increased complexity and coordination requirements and hence foster learning opportunities.

4. Acknowledge the value of articulation work in hiring and career development

In our results, we distinguished two types of collaborative work: *production work* (working together towards the production of goods or services) and *articulation work* (establishing the conditions of collective production work by meshing together the tasks, the actors and the resources involved), which includes *coordination work and contingent articulation work. Coordination work* is dedicated to designing (or redesigning) coordination mechanisms (typically ahead of the time of the production work) that set stable rules and procedures for collective production work (and materialize them into technological artifacts). *Contingent articulation work* is about adapting the procedures in context, as work unfolds, to get work "back on track".

Articulation work is an important part of collaborative work but is not necessarily recognized as such. We especially noted that even if team leaders continue to play an important coordination role, articulation work is increasingly, expected to be performed by team members as well, especially in its contingent form, either implicitly or explicitly. A consequence of the relative invisibility of articulation work is that the value of the competences to perform such work is seldom acknowledged. Hence, we argue that it is important to take into account articulation work for all HRM strategies and practices, from job descriptions to hiring processes, to career development initiatives.

5. Focus the team leader's role on facilitating a shared understanding of teamwork and supporting distributed articulation work

Our research suggests that team and distance work requires team leaders who:

A - foster a shared understanding of teamwork among team members and implement the required conditions for it.

Office workers may have different understandings of what it means to be a team, depending on the interpretative logics at play. Different and even contradicting logics can coexist within a team, creating misunderstandings in what it means to work in a team. We therefore suggest that team leaders encourage team members to discuss and negotiate a shared understanding of what it means and how to work as a team.

B - support the distribution of articulation work among the team members.

The responsibility of effective collaboration has evolved to a distributed phenomenon where team members have gained autonomy and participate in the definition of their collaborative framework. Control has not disappeared, rather it has changed the way team members work together, with trust becoming a key component in task assignments, feedback to colleagues, collective awareness, etc. The role of team leaders is therefore to support coordination, secure consistency within the team (e.g. in terms of teleworking arrangements), identify problems (e.g. the issues of disconnection and work/life balance) and foster the collective construction of solutions.

C - play an active role in the adoption and implementation of ICTs within the team.

Leaders have to be able to assess the usefulness of the tools in relation to the team and to organizational functioning more generally, assessing the social impact of the adoption of a particular tool. One has to keep in mind

that individuals might adopt a tool in different ways depending on their specific competences, backgrounds and preferences. In fact, technology and its uses require explicit reflection and should be acknowledged as a potential problematic factor rather than as an uncriticized solution.

6. Re-design training and evaluation initiatives beyond individual practices, operational skills and digital tools

Contrary to the myth of the digital native, the digital media competences identified in the matrix are not automatically mastered by younger generations. Youngsters are not necessarily more competent than their elders when we talk about collaborating through digital media. The development of digital media competences for collaboration purposes should not be seen as a generational issue, but as a matter of dedicated training and/or education that is not necessarily provided at school today, although it affects everyone. Our results provide some insights as to how such a training should be designed:

- Training and evaluation initiatives should not be designed for individuals alone but also for teams as a whole. Teams need to demonstrate their ability to understand situations and organize team work collectively. Although training team leaders and managers is important, attention should be paid to team members as well.

- They should be based on a definition of digital media competences as observable performances. In that sense, digital media competences differ from "soft skills" defined as values, mindset or personality traits.

- Collaborative digital media competences should be reduced neither to operational skills, nor to mere technical abilities. Skills are only one aspect of the resources mobilized when being competent, and technical skills are also only one part of these skills. It is therefore necessary to develop training programs firmly anchored into activities and practices, which include (digital and non-digital) tools but are not reduced to this dimension.

- We recommended to design teams before selecting tools rather than choosing tools first and structuring and training teams afterwards.

- Training programs should strike a balance between integrating organizational rules (e.g. meeting schedules, file sharing protocols, etc.) and encouraging forms of inventivity in the development of collaborative practices, which could lead to organizational innovation.

- Trainers and educators should be cautious when identifying and recommending so-called "good practices" conceived as general guidelines that could be properly applied to all situations. As all practices are situated and contextual, such an approach could result in an oversimplified representation of collaborative practices and competences. We recommend that training and evaluation initiatives focus on reflexive practices that allow for an adequate framing of specific situations. In turn, this allows the identification of relevant responses to specific problem situations.

7. Integrate the development of DML in a more balanced discourse about organizational change

Celebratory NWOW discourse projects a very positive image of the objectives and consequences of team and distance work. As such it glosses over critiques and worries commonly expressed by office workers and managers. Nevertheless, such critiques and worries are part of the way people give meaning to their work. Ignoring them could lead to discontent in organizations. We therefore recommend that managers and policy makers who seek to foster DML develop a more balanced discourse about organizational change.

In a more balanced discourse, the critiques and worries about the perverse effects of NWOW are explicitly recognized. This recognition of critiques and worries should not only show in HRM and management rhetoric but also inform the actual implementation of organizational change. If management persists in celebratory NWOW discourse without taking critiques and worries seriously chances are that it will be accused of wielding a pseudo-participatory discourse.

There is also an organizational risk that comes with a disconnect between high management ideals and the realities of day-to-day work. From a managerial point of view, it is important not to consider micro-resistances to specific NWOW principles as a matter of bad will and/or resistance to NWOW as a whole. Quite often these resistances rest on ways of thinking that people rely on in order to make sense of their work. In environments where critique circulates, it is important to allow for debate, for a problematization of NWOW practices, as well as for a diversity of standpoints. Critique has to be taken seriously. If not, management and policy makers run the risk of conflicting with the participatory ideals that are supposedly part and parcel of NWOW.

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