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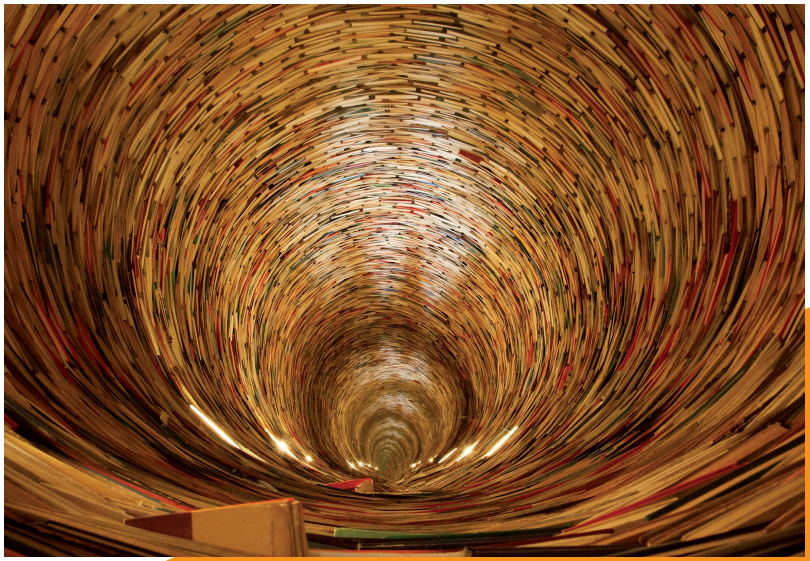
Workplaces as Learning Spaces – conceptual and empirical insights



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Workplaces as Learning Spaces – conceptual and empirical insights

Annette Ostendorf
Institut für Organisation und Lernen (Wirtschaftspädagogik), Universität Innsbruck

Chompoonuh K. Permpoonwiwat
Srinakharinwirot University, Bangkok

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Contents

"*Learning takes on a genuinely active, unpredictable quality when it takes the form of a critically reflexive engagement with personal and social life-worlds, drawing on these resources in varied, autonomous and 'borderless' ways."*[1]

In memoriam

Lynne Chisholm

(1952 - 2015)

Founder of the ASEM LLL research network on workplace learning and our friend

[1] Chisholm, L. (2008): Re-contextualising learning in second modernity, in: Research in Post-Compulsory Education, Vol. 13, 2, p. 140.

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Introduction: Researching Workplaces as Learning Spaces

Karen Evans, Annette Ostendorf and Chompoonuh K. Permpoonwiwat

The Research Network on Workplace Learning (RN2) has directed its attention to the task of decoding working places in Asia and Europe as lifelong learning spaces. Workplaces encompass not just companies and public services, but also a wide range of organisational and social contexts, including non-profit-making NGOs and voluntary work, as well as diverse forms of self-employment, sometimes under irregular and precarious conditions. They offer very different kinds of learning opportunities: some are learning-conducive, others are less so; some provide structured work-related education and training for employees, whereas in others, learning is integrated into the flow of working processes. Learning spaces are constructed through the interplay of workplace structures and practices with formal, non-formal and informal learning. They provide a framework for understanding how opportunities for lifelong learning, including professional and personal development at work, are distributed, structured, experienced and used. Through exchange of information, workshop discussions and joint studies of how workplace learning is provided, practised and understood in Asian and European countries, RN2 is building up a shared body of knowledge that is empirically based, contextualised and theoretically informed.

RN2 was established in 2005 and meets at least once each year. Its members currently come from 15 countries. Its work has shown how not only frameworks of meanings but also socio-cultural and economic contexts vary considerably across the heterogeneous national contexts and organisational segments. The Network's activities, membership and reports are available for download at http://www.dpu.dk/asem/researchnetworks/workplacelearning/.

The 'Workplaces as Learning Spaces' inquiry was initiated in 2013, proceeding from the former work of RN2 (Chisholm et al. 2007, 2012). Early in 2015, RN2 played an active role in the ASEM LLL Hub Forum *Renewing the Agenda for Lifelong Learning*, held in Bali, Indonesia, sharing expertise and research insights with researchers, policy makers and practitioners in both seminar and plenary sessions. It also took the final steps towards the spring 2015 launch of the annotated

bibliography *Workplaces as Learning Spaces: Contextualising Lifelong Learning in Asia and Europe, coordinated by Elina Maslo and Katharina Lunardon*, and announced the planned special issue (RN2_Annotated_Bibliography_ first_edition_08-10-2015.pdf) of the *International Review of Education* on '*Workplace Learning, Subjectivity and Identity', guest edited by* Valérie Cohen-Scali and Theo van Dellen (http://link.springer.com/journal/11159/61/6/page/1). At an international symposium hosted by Masaryk University in Brno, Czech Republic (November 2015), Annette Ostendorf and Elina Maslo led a Methodology Workshop on 'Decoding visual materials in the context of participatory photo interviews in ASEM research projects', sharing aspects of the working methods used in the research with a wider audience. At a second international symposium held in Glasgow, Scotland (June 2016), the publication plans for this volume were finalised.

Through our experiences of carrying out these empirically based and theoretically informed studies, we have been increasingly cognisant of the scale of the challenges faced by comparative research on workplace learning between Asia and Europe. How spaces for learning are understood differs considerably between the countries represented in the Network, or rather, between the societies and cultures these countries represent. Some of these differences may turn out to belong to the defining features of 'Asian', as opposed to 'European', civilisations and their contemporary economic and political structures. Others reflect variations in cultural, economic, political and social features within Europe and within Asia. Accounting for these undoubtedly complex patterns is a matter of ongoing debate in the ASEM Lifelong Learning Hub.

Four guiding commitments continue to shape the Network's approach to developing its activities, building on Chisholm et al. (2012). Firstly, empirical research remains the only way to interrogate and rethink underlying assumptions about patterns of differences and similarities between Europe and Asia. Secondly, the collaborative nature of the research ensures that different perspectives have initially equal claims to legitimacy and are open to interrogation from potentially divergent standpoints. Thirdly, the representation of variety takes priority over demands for consistency and coherence. Finally, the Network currently favours methodological pluralism.

Workplace learning is profoundly interconnected with lifelong learning, the overarching theme of the ASEM Education and Research Hub, of which RN2 is part. Competing visions and paradigms for lifelong learning co-exist at national and international levels. The fact that one 'official' discourse may be dominant at any one time does not mean that other ways of thinking about lifelong learning have disappeared. They are alive and well in a range of critical traditions and perspectives that retain their power to engage and persuade. Network contributors critically

analyse issues in lifelong learning and workplace learning that have important implications for policy in different parts of the world. Evidence, ideas and the polity can mobilise political thinking in new directions as policy makers search for the next 'big idea'. In turbulent times, ideas for ways in which system worlds and life worlds can become better connected can focus compellingly on learning as a lifelong process that links, rather than separates, the older and younger generations and incorporates the realities of working lives. This volume aims to incorporate the actualities of working lives in contrasting societal contexts in this debate.

The paper collection encompasses nine research contributions of RN2 members. Some arose as single papers, some as joint projects, some across different cultural backgrounds, some deepening the understanding of workplace learning in specific cultural contexts. Most of them have in common the use of qualitative empirical data for theorising and many of them include visual material as a source of research. This is the result of the RN2 methodological discussions from recent years at Network meetings, which have brought up interesting but not unquestioned suggestions for alternative ways of conducting qualitative research using visual methods, such as participatory photo interview. In this respect, this collection may be seminal for further discussions on progress in qualitative research methodology.

Natasha Kersh and *Karen Evans* start with a piece of research conducted to throw light on the processes and conditions fostering individuals' construction of their own learning spaces related to work. The authors used the photo-participatory method in a UK context of IT-related and university workplaces. With their article, they also prepare the theoretical ground for conceptualising workplaces as learning spaces, which is also important for the reading of the subsequent articles. Using workplaces as learning spaces is characterised as a complex phenomenon in a relational arrangement between work, learning, human agency and space.

Katharina Lunardon, *Pier Paolo Pasqualoni* and *Chompoonuh K. Permpoon-wiwat* inverstigate transnational and transdisciplinary research networks as learning spaces. Tuckman's group development model leads their theoretical argumentation, inspired also by their own considerable experience. In addition, 'non-places' (such as hotels and train stations) are explained as a feature of learning spaces.

Theo van Dellen and *Döndü Yurtmaz* use participative photograph interviews and dynamic concept analysis to explain the workplace learning of adult learning professionals (such as teachers, trainers, coaches and counsellors). The focus is on the features of workplaces that restrict or foster learning and professional development. It is reported that, from the learners' perspective, learning 'just happens' in the workplace but obviously there is a demand for awareness of personal development in workplaces. It is astonishing that even adult learning professionals are not very reflective in this respect.

Padma Ramsamy-Prat describes in her article the 'art' of workplace learning. Using two cases of young professionals working in an academic context, she is also able to explain the hidden dimensions of workplace learning that are strongly bound to creativity, intelligence and art. Micro-phenomenological interviewing, combined with the auto-photography method, was used to gain empirical evidence.

Elina Maslo investigates different perceptions of learning by interviewing two persons at the same workplace using the participatory photo interview method. With this design, she is able to explain individual perceptions of the learning potential of workplaces. Using categories of spatial analysis, a hybrid space is identified, transforming working and life aspects.

Daiva Bukantaite reports the findings of her research conducted with university administrators from eight universities in Lithuania. Using participatory photo interviews, she reveals that university administrators strongly relate their thinking about learning experience to the task performance process. The interpretation of learning is linked to the accomplishment of the given tasks. Trusting and encouraging them can be seen as important push factors for their learning.

Helen Bound and *Arthur Chia* use two semi-ethnographic cases from a research project on 'Assessment for the changing nature of work' conducted in Singapore to explain how and in what ways learning spaces mediate learning and assessment. They particularly focus on material (such as tools) and immaterial (such as discourses) practices and relational aspects within the learning space and give an alternative view of assessment issues.

Annette Ostendorf presents some empirical insights derived from an Austrian research project (PEARL) on learning at workplaces in business internships. One specific focus is on the 'opening phenomenon', which seems to be very important for the use of the 'learning space business internship'. The theorising is based on qualitative empirical data gained in a very specific way involving interns as 'junior researchers'

The contribution of *Areeya Rojvithee* gives insights into a strategy for increasing the productivity of labour in Thai workplaces. It is conceptualised as a policy report explaining the relationship between workplace training and productivity. In particular, SMEs are going to be encouraged to use the outcomes of the explained public-private partnership project.

We want to thank the ASEM LLL Hub for the financial grant for this paper collection and Eva Adelsberger-Höss for her help concerning the formatting process.

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Exploring working places and self-generated learning spaces: concepts, perspectives and cases from the United Kingdom

Natasha Kersh and Karen Evans

The article focuses on the notion of the learning space at work, particularly considering the relationships between work, learning, human agency and space. The issue of recognising working spaces as contexts for learning has received much attention in the educational debates of the past twenty years across a number of countries worldwide, and in particular, in Asia and Europe (Chisholm et al, 2012). The interpretation of the workplace as a site only for work and job-specific training has been changing, and workplaces are now being acknowledged as sites for learning in various configurations. The article draws on the notion of the learning spaces at work, looking specifically at their structure, meaning and affordances in different settings. In order to explore ways in which workplaces are experienced as learning spaces the study employs the photo-participatory method. The method has enabled practitioners to articulate what a learning space means for them, in ways that contribute to both visualization and reflection. The cases, considered in this article, demonstrate the way individuals construct their own working spaces, discussing their particular strengths and limitations. The research has suggested that different types of learning spaces (such as institutional or independent sector settings) may play a significant part in enhancing the learning processes, motivations and attitudes of employees within their workplaces. The article considers views and perspectives from both independent specialists and institutional teachers and researchers specifically reflecting on how the concept of space influences their professional and personal development as well as life chances within the workplace and beyond.

Key words: learning space, workplace, self-generated learning spaces, photo-participatory method

Introduction

The notion of the 'learning space' and its different meanings and implications has been discussed extensively in a range of research publications (e.g. Brooks et al, 2012; Chisholm et al, 2012; Evans and Kersh, 2014). The interplay between spaces and learning has received recognition as one of the fundamental aspects of the debate on contemporary workplace learning and competence development (Evans and Kersh, 2017; Brooks et al, 2012). Factors such as the rapid expansion of digital technologies, the recognition of the significance of different modes of informal learning and globalisation have had a profound impact on the perception of the learning space, its purposes, meanings and implications. The perception of the learning space as a conventional physical space has changed, and learning spaces stretch beyond classrooms and teaching spaces. As Brooks et al (2012) note, this trend has been associated with the shift away from an objective understanding of space as a system of organisation or geometry towards an emphasis on how space is constructed through the social processes that give it meaning.

The concept of space as a configuration of an environment or a context has interdisciplinary significance. The conception of space that originated from the discipline of geography has recently received substantial attention from other disciplines, and in particular from the social sciences. This trend has been characterised by the shift away from an objective understanding of space as a system of organisation or geometry towards an emphasis on how space is constructed through the social processes that give it meaning where learning spaces at work are not just containers of moveable objects and dynamic flows of behaviour (see Brooks et al, 2012). Spatial theories seek to provide a relational understanding of how these spaces are constituted and how they are given meaning through human action.

A range of studies addressing the relationship between power and knowledge has highlighted the importance of relationships of space to societies as well as space–time relationships (e.g. Foucault, 1980; Soja, 2002; Goffman, 1990). In exploring the notion of space, social sciences research largely focuses on the ways space is constructed through social processes and constructed by them (Brooks et al, 2012). Employees' personal workspaces enhance their effectiveness, creativity and social practices, within constantly changing contemporary workplaces (Kohlegger et al, 2013).

The issue of recognising working spaces as contexts for learning contexts has received much attention in the educational debates of the past twenty years, and especially during the most recent decade across a number of countries worldwide, and in particular, in Asia and Europe (Chisholm et al, 2012). The role of learning spaces for lifelong learning specifically in relation to the education of adults has been and remains one of the central points of this debate. A significant body of

research literature (e.g. Edwards, 2006; Evans et al 2006; Malloch et al, 2011) brings attention to the significance of the workplace context and the distinctive features associated with learning within a working space, and its impact on individual motivations, experiences and outcomes. As earlier suggested in the 1995 research by Nonaka and Takeuchi, shared mental models at work relate to shared space within, and this provide opportunities for learning, knowledge sharing and linking practice and context within social situations (Nonaka and Takeuchi, 1995). What employees learn as 'learners in the workplace' and in experiences beyond the workplace (Livingstone, 2006) leads to the development of new forms of knowledge and competence.

Working places as learning spaces: conceptual issues

The perception of the workplace as a site only for work and organisation-specific training is gradually changing, as workplaces are now being acknowledged as sites for learning in various configurations, contributing to lifelong learning, personal development and social engagement of individuals (Fuller et al, 2007; Heiskanen and Heiskanen, 2011; Guile, 2010a), as well as the exercise of wider social responsibility in and through learning (Evans, 2009). The traditional model of work-based learning was the 'one-off, pre-service education and training model' (Hodkinson and Bloomer, 2002). Thus, as noted by Evans and Kersh (2014), the traditional view of work-based learning was that it mainly consisted of qualifications or training (such as the apprenticeship model) gained prior to employment or progression in employment. This model is being challenged by the interest in 'workforce development' and the changes in the perceptions of learning spaces at work. Evans et al (2006) distinguish between workplace training and learning by making a point that training implies an intervention that is formally structured and involves a transfer of a body of knowledge, while workplace learning is more encompassing and involves locating learning in social relations at work (Evans et al, 2006). Workplace learning could be further facilitated within a learning organisation, through a range of approaches, for example mentorship (Chen and Wen, 2011), an innovative apprenticeship model (Rauner et al, Guile, 2010b) or a model of lifeplace learning that is associated with the model for creating new structures for accreditation of prior learning through reflective practice (Harris and Chisholm, 2011). Remedios and Boreham (2004) note that a necessary feature for an organisation to label itself a learning one is that mechanisms are put in place to optimise the transfer of knowledge between all levels of employees thus creating an environment where employees recognise that their ideas will be acknowledged,

discussed and can influence subsequent working procedures. Workplace spaces are then characterised by being both work and learning spaces where the boundaries between the two are considerably blurred (Solomon et al, 2006: 6). As Brooks et al note, it has, in some sense, been driven by contemporary policy initiatives: the encouragement for us all to contribute to learning throughout our lives, to ensure we stay employable in a constantly changing globalized competitive environment (Brooks et al, 2012).

Previous research (e.g. Evans et al, 2006; Solomon et al, 2006; Kersh et al, 2011) has indicated that the concept of the learning space can be considered from various angles and perspectives. Firstly, the learning space can be perceived as a physical space where learning is taking place such as a classroom or any other form of teaching space. Secondly, the learning space can refer to a space where learning occurs unintentionally, as informal learning, for example at work where employees learn from each other's experiences. Thirdly, the recent expansion of digital technologies has resulted in the development and growth of virtual learning spaces that ultimately change the boundaries of learning spaces making them more flexible and mobile. Finally, the learning space can be perceived as a combination or overlap of a range of components, such as physical space, learning contexts and environments, formal/informal learning and virtual learning. Recent trends in economic, political and educational developments have resulted in somewhat blurred boundaries between the spaces in which learning, work and leisure occur.

Situated learning theory further enriches the concept of the learning space by reminding us that learning spaces extend beyond the teacher and the classroom (Kolb and Kolb, 2005). Solomon et al (2006) draw on the term 'workplace learning', arguing that this notion has particular meanings and practices because of its location and because that location is not an educational institution. Drawing on the work of Bronfenbrenner (1977; 1979), Kolb and Kolb (2005) refer to four types of learning space. The learner's immediate setting, such as a course or classroom, is defined as the *microsystem*. The 2012 research by Kersh et al (2012) has also extended the concept of the microsystem to the learner's immediate workplace setting since we consider workplaces as learning sites. Other concurrent settings in a person's life such as other courses or family are called the *mesosystem*. The *exosystem* refers to the formal and informal social structures that influence the learner's immediate environment, for example, institutional policies and procedures and culture. Finally, the *macrosystem* relates to the overarching institutional patterns and values of the wider culture, such as cultural values favouring abstract knowledge over practical knowledge, which influence actors in the person's immediate microsystem and mesosystem. Correspondingly, the formulation of workplace learning by Evans et al. (2006) emphasises individual, institutional and

environmental scales of learning at work, understood as learning that happens in, for, and through the workplace.

Interviews undertaken as part of the ASEM Lifelong Learning Hub study have used the photo-participatory method with the aim of uncovering how individuals experience and create their learning spaces both within and outside their workplace settings. Our respondents included:

- Independent information technology (IT) specialists
- Institutional IT teachers
- Academics and researchers working with IT resources.

Practitioners were invited to participate in the study by taking photographs of scenarios or images that captured, for them, their learning space. Their explanations of their learning spaces have, with consent for their use, provided material for the cases discussed in this article.

Including the perspectives of independent specialists as well as institutional teachers and researchers has enabled us to shed light on how learning spaces are understood and negotiated in both institutional and independent workplace modes and settings. The cases considered below demonstrate the ways that learning spaces are perceived, constructed and co-constructed through a range of contexts and environments.

Working spaces: self-created learning spaces

The configurations of different types of learning spaces in the contemporary world have resulted in the emergence of what Felstead and Jewson (2012) referred to as new places of work and new spaces, such as collective offices and new work locations (such as at home and on the move). They further note that the trend is not for work simply to shift from one type of workplace to another but rather to spread out across a diverse network of different sites, which are linked by information and communications technology (Felstead and Jewson, 2012: 154). One significant implication of the individual scale of learning spaces at work is associated with the way individuals create or construct their own personal spaces which enables them to engage in their workplace activities. The cases below demonstrate the way individuals construct their own working spaces, discussing their particular strengths and limitations.

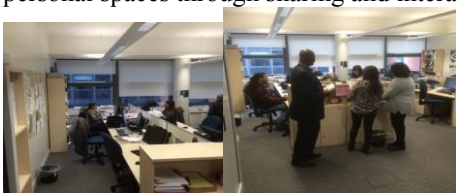
Case 1. Self-Created learning spaces: perspectives from an independent IT consultant.

I work for a small research and development company […] registered [...] in Wales. We have something like 14 employees, most of us part time, and living in Wales, England, Germany and Spain. Although we have two offices, in Pontypridd and in Bremen, Germany, most of us work from home. We make extensive use of technologies for day to day communication. I have two of what the Germans call 'home offices' in my two homes in Spain and Germany. I suppose these are the nearest I have to a 'traditional' working space.

The offices serve a number of purposes. One of the big advantages of working from home is that it does not take long to get to work (in one of my previous jobs I was traveling nearly three hours every day, to and from my official workplace). But there are downsides. One is that I am not careful I can end up working very long hours – another is that it is hard to get away from the work. At least with an office it is possible to escape form the clutter of work instruments and tools – papers, files, computer equipment, printers, stationary and so on. Secondly, the office provides a place to flee to avoid disturbing other people in my flat. Neither office is really ideal– nor am I quite sure what an ideal office would look like. Certainly in summer both suffer from a surfeit of sunlight! But at least in my larger […] office, I have an old sofa and an Ikea chair for when I get fed up at sitting at the desk. The big problem with an office I think – and this applies just as much if not more to working in an institutional environment – is social isolation. I used to work in an institution in the university in Bremen. It was a modern architect designed, environmentally friendly building. It certainly was not the breeze blog and concrete UK researchers have had to get used to. And in terms of learning probably one of the worst places I have worked. The blinds went up and down automatically according the not so intelligent decisions of the central computer. Lights were automatic too. In evenings if you did not move enough you were plunged into darkness. But worst was that although everyone had very nice offices, the building had been designed without any social spaces (apart from two small kitchens). And it is in those (informal) social spaces where learning takes place.

There are similar downsides to working at home despite the ease of telecommunications. But I frequently move around the flat to different rooms and there is usually some kind of everyday social interaction, certainly with the environment, often with other people.

Case 2. Perspective from an Information Technology college tutor: creating personal spaces through sharing and interacting with colleagues.



There's been plenty of interaction with other people in the department, like sitting next to me, I'll just hand them my materials, and I don't get a lot back but I get some back! But I guess that's just the way it is, I tend to be a person who creates lots and lots of [teaching] materials anyway […]. But having said that, that makes me popular with my other colleagues because straightaway they've got, made up sessions, if they're teaching the same topics, the same unit, I tend to be first port of call. […] So from that viewpoint, that type of working space does function extremely well. It's only when you need that quiet time, that time when you really have to focus on what you're doing, is undoable, absolutely undoable. Now that environment there […] is just 3 desks, 3 desks, 3 desks, 3 desks. 1,2,3; 1,2,3; a computer, you know you use the little drawers and so forth, and as I say the strengths are that it's good from the viewpoint of, as I say, interaction with colleagues, and so therefore it does enforce a sharing situation from both work prospect and also we share materials, we share resources, we share knowledge quite freely in my department. I've been trying to do something with another colleague on games design and so been looking at this particular software that the client happens to have online, which is challenging software at best, but he's helping me and I'm helping him, so there is a good – and he sits next to me, so it works extremely well from that viewpoint. It's crucial in a sense because, when you're working you need to have your things that you know, that are familiar. […] I've got my hard drives there [in my working space], I've got a drawer full of old CDs and stuff that I might want to access and other bits and pieces, somewhere to put your bag[…] , I mean it's just little things like that when you arrive. But an area to be able to put your day to day and week to week paperwork that you know you're going to need, and a little space at the back there where you can pin your timetable, you can pin your meeting timetable, you can pin any of the student related [notes]…where external people are coming in and all that, sort of your dates and so forth, your calendars. So if you've got that information just there it's very, very crucial. And behind me we've got the student timetables, well the teaching timetables of each group, so I can just turn round and go 'OK I know where my colleagues are'.

Case 3. Perspectives from a university researcher: New learning spaces: ‘The bus – where I could fit it in’.

Most of my doctoral thesis was written on the No 17 bus between Byres Rd in Glasgow and Paisley. My funding had finished and I was working creating distance learning materials at the University. I’d print out the current draft of a chapter each night, edit and expand on it on the bus journeys that day then slink into the lab late at night to use the PC to type things up and print something else to work on the next day. The key here, is that while the physical space on a bus is never ideal, it worked for me because it was a regular time (10 times a week, for 40 minutes) when I could immerse myself in writing up that didn’t get in the way of my new work responsibilities. Bus journeys have always been a key learning space: after I left Paisley, I spent five years commuting to Heriot-Watt and read for a couple of hours on the bus everyday during that time. I’ve also spent a lot of my life living and working between Glasgow and Edinburgh regularly ‘crossing Scotland’s waist‘on the No. 500 bus – giving me even more time to read and learn. I’m ashamed to say that I read much less nowadays and I’ve always maintained that during that time I got out of the habit of reading at other times when I had so much time to read on buses. Now my commute is car and bike based, so reading isn’t an option, but I routinely use my commuting time at each end of the working day to plan and reflect.

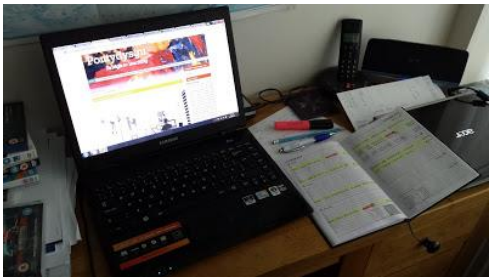
The interpretation of these cases indicates the interplay between the three dimensions of the learning space, namely individual, environmental and institutional. The individual dimension plays a central role in the development of personalised self-created learning and working spaces. The three cases demonstrated the ways individuals construct their own work-related learning spaces, which enables them to work and learn within self-created environments. The individual approaches towards constructing learning environments require both personal creativity and proactivity, as individuals develop their spaces. Furthermore, recognising the potential strengths and limitations of self-created learning spaces makes this process reflective. Case 1 indicates that extending workplace learning

spaces to other types of environments (such as a home office) is associated with both benefits and shortcomings. The environmental dimension (home environment) overlaps with the individual dimension, resulting in the development of a workplace space that enables an IT specialist to work according to their own agenda and goals at a time and place they consider convenient and productive. At the same time the boundary between home and work space becomes somewhat blurry, which might result in working long hours, as this type of environment would be strongly associated with being in the workplace. Another implication of the 'working at home office' is that of potential isolation and lack of interaction with colleagues. Case 1 indicates that a range of approaches can be employed to tackle these problems, for example through using modern technologies. Case 2 provides an illustration of creating a learning space in an institutional setting through interactions with colleagues. For the IT tutor working in a college of further education, the learning space at work is perceived as an environment that allows for social and professional interaction. Learning through interaction and sharing resources is a significant element of the meaningful learning space at work. Within institutional settings, which might be restrictive to some extent, the learning space is constructed through dialogue, sharing and learning from each other. Case 3 offers an illustrative example of developing and using non-conventional learning spaces. The researcher's case suggests that working and learning 'on the go' could be as productive as working and learning in a more traditional learning environment. The case also indicates that this type of learning space needs to be adapted to the specific working and learning purposes and requirements. The environmental aspect (e.g. being on a bus vs riding a bike) presupposes types of learning activities that an individual might engage in.

Working spaces: modern technologies and virtual learning

One configuration of the environmental scale has been associated with the development of modern technologies that allows learners to extend their learning spaces to a variety of environments, including home and workplace settings. The expansion of digital technologies provides learners with opportunities to access and undertake learning activities in a range of other settings, including home and workplace environments, public libraries and youth centres, and even on trains and buses. Felstead and Jewson (2012) observe that the recent developments in information technology have weakened the spatial fix, with workers becoming increasingly detached from personal cubes of space. The use of devices such as computers, laptops, mobile phones and netbooks has contributed to the development

of the virtual learning space where learning might not be associated with a specific site or specific time. The virtual learning environment provides a degree of flexibility for the learner, enabling them to acquire learning at a time and place convenient for them. As indicated by a university researcher, the use of computers and internet enables her to extend her personal workplace learning space to other types of environments (such as home), where the boundaries between different spaces are considerably blurred:



For me, my working space has always been my learning space (well, ever since I became involved in education anyway). This is because I consider myself to be a professional learner. I get paid to teach and research at [a University] but this all comes about through my own personal learning. Also, I do a lot of my work from home, because, although I have wonderful colleagues who are an absolute pleasure to work with, we have a shared space for 5 desks in my office, and it's not always easy to concentrate when there are several of us in the same space, all holding different conversations. [interview with a university researcher]

The use of new technologies has been gradually changing approaches to and ways of teaching and learning in work-related environments. The research by Dennen and Wang (2002) shows how the learning process, which may include interventions such as coaching, mentoring and communities of practice, can be enhanced by the availability of internet-based technologies and present some of the advantages for both the informal learner and the workplace by this technology, as well as the challenges of using the technology well to support informal learning processes. García-Peñalvo et al (2012) also argue that the Internet and its increasing usage has changed informal learning in the workplace specifically stressing the significance of the internet as a new way for people to communicate, where communication is a means of transformation and knowledge exchange. In this context the concept of mobile learning has been further emphasised. However, as Pachler et al (2011)

further stress, mobile learning is not simply about delivering content to mobile devices but, instead, about the processes of coming to know and being able to operate successfully in and across new and ever-changing contexts and learning spaces. The development of modern technologies plays a central role in changing the perceptions and boundaries of the learning space. Cases 1 and 2, for example, suggest that digital technologies make it possible to extend workplaces and learning spaces to other less conventional environments such as home environments and 'learning on the go' contexts, allowing individuals to work, learn and interact with colleagues:

> *With new technologies, many conversations take place today over the internet. And those technologies help us develop and curate Personal Learning Networks. Yet face to face conversations can be more animated informal and allow wider ranging conversations. It is notable that many people say the best learning at conferences and meetings take place in the coffee breaks and in the evenings. Sometimes I contact people in advance to meet up for a chat. Other times such meetings happen by chance. Sometimes meetings are with friends I have met and worked with before, sometimes with more distant contacts. And sometimes they are with friends and family through internet and other means of communication. [interview with an independent IT consultant]*

Similarly, sharing resources, as in the context of Case 2, takes place through both verbal and online interaction. Online methods of communications, knowledge sharing and development of skills provide flexible opportunities for teaching and learning, interaction and professional and personal development. As illustrated by an IT teacher, online resources are crucial for both facilitating teaching and for teacher professional development and self-learning in the context of further education:

> *There are always students who are very weak academically and I spend half my time trying to teach, find methods for getting them to be much more academic in how they work. So for example now I don't do the chalk and talk because they just don't listen, just don't listen, so I give them all the answers, and all the questions and all the answers are up there on Moodle. [interview with an IT college tutor]*

Discussing own professional development in the context of institutional settings, which might be perceived as restrictive, the tutor emphasised the significant role of modern technologies:

> *I bought one book this year, and then I went and asked my line manager for some more. […] I said 'can we get some more books', she said 'oh OK'. So she spoke to the PA who was sitting beside her and said 'how much have we got in the budget', she said '£3 or £4'. OK. So I guess my learning's going to be online!. [interview with an IT college tutor]*

The cases indicate that the virtual learning environment provides a degree of flexibility for both professional and personal development, enabling employees to acquire learning and develop skills within a range of environments and settings.

New spaces – new skills

New spaces of work and learning, and their different configurations, place new demands on skills acquisition and development. The interplay between learning and working spaces, which have been characterised by blurred boundaries, requires employees to develop a range of transferable skills that would enable them to adapt to the changing nature of the learning space at work (Kersh, 2015). The debate on work-related competences has highlighted the issue of the significance of developing personal competences and abilities that people can use in a variety of settings, including workplace settings (Evans et al, 2006; Eraut, 2004). The definition of the term 'competence' offered by Eraut and Hirsh (2007), quoted above, emphasises the important links between individuals' capabilities and their competences. All their competences will be, as Eraut and Hirsh (2007) explain, within their capability; but not all their capability will be needed for any specific job. Therefore, they will also have *additional capability*, which may have a tacit dimension. Such additional capabilities may be helpful both in enhancing one's competences through further learning (Eraut and Hirsh, 2007) and in facilitating the process of transferability of competences between various contexts and settings. Boud and Garrick (1999: 1) similarly observe that employees are extending their educational capabilities in learning through their work: 'opportunities and problems within work are creating the need for new knowledge and understanding. Employees develop skills of expression and communication which spill over into their personal lives. They learn new ways of collaboration and planning which they apply in their families and community organisations to which they belong.' As Felstead and Jewson (2012) point out, a common set of skills characterises those who successfully adapt to a range of new working spaces. These include, for example, motivation, self-discipline, the ability to establish and maintain boundaries with others to achieve targets without immediate supervision etc.

In terms of developing skills that enable individuals to navigate a range of spaces and environments, our interviews have indicated the significance of taking into consideration not only space but also time, as another dimension of learning. One of the respondents, reflecting on the role of the time factor, makes a connection between time and space:

> *Like many, I am a terrible procrastinator, and I do my best work against hard deadlines. That often means working late into the night. As a student I never started studying before 10pm – my studying was soundtracked by John Peel – and I still feel this is when I am at my most focused. I can use late night sessions to finish work, but also to break the back of a problem – so that I can be in control of timescales further down the line.*

The interplay between time and space indicates their strong connection between the purposes of space and time management. Self-created learning spaces are often constructed to make the use of time more efficient (e.g. learning/working on the go or working from home). Time management in an appropriate learning and working space is one of the skills required by the modern workplace.

The acquisition of such skills, as Felstead and Jewson (2012: 155) point out, represents a major contribution to underlying learning dispositions of employees, as new spaces of work demand new models of self-governance and time management. For example, international learning spaces, facilitated through transnational projects, are becoming increasingly recognised as learning spaces that provide a shared platform for international development and exchange of ideas and experiences. Such spaces may be developed as both online platforms and face-to-face workshops or any other forms of transnational cooperation. The quotation below illustrates an example of developing a learning space through a project of EU cooperation, specifically describing an instance of presenting the project's developments and findings at a stand at an international conference:

> *In a big project like Learning layers which has some 20 partners and is organised in different work teams developing different applications to support informal learning, it means you have to appreciate and understand the work of others in order to explain it to visitors. And with the barcamp and posters sessions [at an international conference] we developed spaces for informal learning within the conference. The bar camp – an unconference session – allowed participants to put forward their own ideas for discussions and exploration in a series of round tables. Participants were active and motivated, unlike the usually passive engagement in formal*

> *paper sessions at conferences. I have little experience in medical education. Most of the participants were practitioners in medical education, with many ideas to learn from. I do not really understand why more such sessions are not organised in major conferences. As an aside, conference venues are seldom designed as learning spaces. Rows of chairs facing a presenter at the front hardly inspires interaction and social learning. […] But for me the real learning at the conference was from the Learning Layers team. There were eight of us and we rotated in pairs on the exhibition stand. Like many of the big European research projects, Learning Layers in an interdisciplinary project. Partners include social scientists, pedagogists, business science specialists, designers and technical developers. We can learn from each other and from people with a different subject specialism from our own. This happens to an extent in formal project meetings but the time spent on the stand allowed more in depth conversations. And in the course of the three days spent together we bonded as a team. [extract from interview with an independent IT consultant]*

Learning and sharing knowledge internationally is one of the central implications of international learning spaces in the globalised environment. The contemporary debate has highlighted the significance of transferrable skills that enable individuals to navigate a range of spaces both national and international.

The discussion on understanding work-related transferrable skills required by new workspaces has underlined the importance of gaining a better understanding of how knowledge and competences are used and developed as people move between different contexts and settings, including both workplace and other informal/formal settings. While the metaphor of 'transfer' has been dominant in recent times, the current debate has extensively problematised this notion, which often pays insufficient attention to the processes involved in recontextualising skills and knowledge in order to put them to work in new and changing contexts (see Hager and Hodkinson, 2011; Evans and Guile, 2012). In this context, the role played by tacit skills as well as interdependencies and interplay between tacit and explicit dimensions at work have been identified as factors affecting the transferability and use of skills and competences in a range of settings and spaces.

Conclusion

Complex interdependencies between learning, work and space have contributed to the emergence of new workspaces, where the boundaries between work and learning are considerably blurred. The cases, considered in this article, indicated that the learning space at work can be perceived as a combination or overlap of a range of components, such as physical space, learning contexts and environments, formal/informal learning and virtual learning. Research (e.g. Brooks et al, 2012) suggests that the spatial dimensions of workplace learning play a significant role in facilitating or undermining employees' opportunities for professional development as well as their outcomes and motivations towards the acquisition of a range of skills and development of social practices, that facilitate communication, knowledge sharing and skills development.

Methodological challenges in researching the ways in which workplaces are experienced as learning spaces have been addressed using the photo-participatory method. The method has enabled practitioners to articulate what a learning space means for them, in ways that entail visualisation and reflection. The approach has readily engaged the participation of busy practitioners who might otherwise have declined a research interview about a seemingly abstract concept. The cases have represented the participant's voice and the researcher analyses have been dedicated to interpreting what the teller means, in the context of relationship between the teller, the photograph and the audience. The method has enabled comparisons to be drawn between the learning spaces of practitioners who inhabit an institutional environment and those who work independently. A wider aim of the photo-participatory method has been to enable particular cases to be shared, in the context of the international project, in ways that facilitate international debate on the meanings and dimensions of learning spaces in contrasting cultural contexts.

The use of the photo-participatory interviews with IT professionals has helped to illuminate how:

- Workplace spaces can provide continuous opportunities for learning;
- Employees as well as students learn through a range of learning spaces in the working environment;
- Learning spaces are co- constructed;

- Different types of learning are interrelated, and this interrelation may facilitate or undermine learning processes and outcomes;
- Modern technologies can play a significant role in enabling individuals to navigate a range of spaces.

The research has suggested that different types of learning spaces, (e.g. institutional vs independent sector settings) may play a significant part in enhancing the learning processes and aspirations of employees within their workplaces. Considering views and perspectives from both independent specialists and institutional teachers and researchers enables us to reflect on how the concept of space is exercised in institutional vs independent workplace settings. The data suggest that in both types of settings individuals learn through a variety of spaces, including self-created learning spaces. However, the independent sector as opposed to the institutional sector, offers more flexibility in terms of creating and developing less conventional learning and working spaces, which sometimes stretches beyond the boundaries of a single country (e.g. Case 1). Therefore, in the context of independent sectors, in which the boundaries between institutional and environmental scales are blurry, workers generate their own institutional environment. Institutional settings allow some flexibility for creating personal learning spaces; however, only within the boundaries of the specific workplace (institution). Digital technologies in both independent and institutional sectors further play a significant role in expanding and developing virtual learnings spaces, which facilitate communication, knowledge sharing and skills development.

Developing both confidence and motivation in the workplace is another significant outcome associated with different learning spaces. Both the literature review and our interviews have suggested that practitioners' capabilities and motivations have developed in a range of workplaces related to a wider range of differing environments. Apart from using their newly acquired skills in the workplace, their capabilities are readily recontextualised to mesosystems, for example their family environments. The data suggest that different types of learning are interrelated, and this interrelation may facilitate or undermine learning processes and outcomes. Family settings provide opportunities for employing and developing a range of skills acquired in the course of workplace literacy and numeracy programmes, thus extending the learning space from the workplace to the home environment. The concept of virtual learning that has been associated with the expansion of digital technologies broadens the notion of the learning space, and contributes to erasing the borders between different types of learning site. In order to

be able to navigate different social landscapes and spaces, individuals need to develop a range of transferable skills that enable them to navigate the changing demands of workspaces, and more broadly, the changing requirements of labour markets.

The consideration of workplace learning and its different configurations has underpinned the complexities between work, learning, agency and space. The interdependencies between individual engagement, competence development and organisational context strongly relate to workplace social practices and the ways they reflect and shape culture and social structures including work organisations (Chisholm et al, 2012). The complexities of workplace learning have been reflected in the changing requirements for competence development and its interplay with the changing nature of the learning space at work. The exercise of agency through the virtual environment has the potential to facilitate learning at work, relating it to other spaces and environments. The perspective of social ecology provides a way into understanding the complexities of factors that impact on learning in the workplace, through the interplay of actors, structures, processes and environments. This interplay is not restricted to the workplace but involves the overlap of learning spaces and other contexts that extend way beyond the workplace. The concept of learning *in, for and through* the workplace (Evans et al., 2006) thus attends to the social processes that shape employees' perceptions and attitudes towards engagement in workplace learning, thus influencing their professional and personal development and life chances within the workplace and beyond.

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Annette Ostendorf, Chompoonuh K. Permpoonwiwat (Eds.):
Workplaces as Learning Spaces – conceptual and empirical insights

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Transnational and Transdisciplinary Research Networks: Creating Learning Spaces by Transcending Boundaries for Collaboration

Katharina Lunardon, Pier Paolo Pasqualoni and Chompoonuh K. Permpoonwiwat

In recent literature, the concept of learning spaces has been fruitfully applied to a number of research areas. It is this concept that shall be used to describe how mutual and collective learning and innovative ideas can be facilitated within transnational and transdisciplinary networks and projects in which physical, virtual, affective and cognitive contributions of single researchers and research groups span a net of overlapping learning spaces created around a mutual research interest.

Such enterprises typically take place in a variety of spaces, and – beyond the member's workplaces – at non-places in particular. The authors provide some evidence for how a concept of learning spaces, and according theoretical frameworks, can provide added value for the purpose of identifying and reflecting on challenges typically met and opportunities unexpectedly created in the attempt to make transnational and multi-professional collaboration work. Their contribution highlights some preconditions of building trust among the researchers; means to foster and to maintain their commitment to a common research enterprise; key issues to consider when forming and expanding the network; the role and significance of communication and of shared norms.

Key words: Learning spaces, transnational collaborations, transdisciplinary research networks, group dynamics, non-places

Introduction

The first universities were institutions in which scholars and students from different cultural backgrounds joined in to form a community in its own right. Special freedoms were assigned to the community and its members to ensure they could

concentrate on their key tasks: to pursue knowledge by joined efforts in learning, teaching and scholarly enquiry.

From a historical perspective, higher education has itself been a highly international enterprise, and it continues to be across the globe, although – in terms of locations – it seems to have shifted from physical places to spaces. Such spaces, beyond merely being inhabited, constantly need to be shaped by the participants.

In the present day environment, "[i]nternationalization is an integral part of a continuous process of change in higher education; increasingly it is becoming a central motor of change. Its importance has grown along with the more general developments of globalization, offering new opportunities but also posing new challenges." (Egron-Polak & Hudson 2014: 5) Beyond being increasingly demanded by policy-makers, research funds and key actors within higher education institutions, internationalization not only continues to be associated with broadening researcher's horizons. It also carries the promise of leading to innovation, and appears thereby to have assumed a new function. This is, however, not always straightforward to realise, and – despite being a powerful tool to collect data and building data bases – there are only few examples of international research projects that actually lead to theoretical or methodological innovation.

International cooperation is facilitated by a degree of harmonization among the educational systems and environments. Still, diversity remains the main asset for institutions to go international, particularly in the area of education. In this context, the diversity of a research group enriches the discourse by saturating on-going debates with divergent perspectives. Thus, for using diversity as an educational resource, constant reflection on potential unintended consequences is essential: Whenever harmonization among the systems is taken to an extreme, it can easily lead to conformity of perspectives, thereby throwing the baby out with the bathwater.

As the authors will argue, in a truly international cooperation harmonization hardly can lead to such a consequence. It is for such a truly international project in which diversity adds value to the common enterprise that the attribute 'transnational' will be used. If this is the goal, this still does not answer the question how to get there and even less how to maintain that property over time.

In addressing this question, this paper relies on various and recurring experiences of all authors in developing, organizing and conducting transnational research projects in transdisciplinary research areas. Such research typically takes place in a variety of spaces, and – beyond the researcher's workplaces – at non-places in particular. In recent literature, the concept of learning spaces, despite lacking a common definition, has been fruitfully applied to a number of research areas. Still, it is this concept that shall be used to describe how mutual and collective learning can be facilitated within transnational research networks and projects, in which physical

and virtual contributions of single researchers span a net of overlapping learning spaces created around a mutual research interest.
In discussing the topic from this perspective, the authors attempt to provide some evidence for how this concept, and according theoretical frameworks, can provide added value for the purpose of identifying and reflecting on challenges typically met and opportunities unexpectedly created in the attempt to make transnational and multi-professional collaboration work. Therefore, this paper will pay due attention to preconditions of building trust among the researchers; means to foster and to maintain their commitment to a research project; some key issues to consider when forming and expanding the network; the role and significance of communication, including ICT tools, and the delicate task of initiating norming processes in the research group.

This mission will start by introducing the concept of learning spaces, only to elaborate on the way it can be fruitfully adopted to research networks, particularly those that are transnational and transdisciplinary in their character. The authors then will consider some challenges typically met in real existing transnational and transdisciplinary research networks as they experienced them. After discussion, the final step will lead them to consider ways of overcoming barriers by inhabiting diverse places to work together – an approach that is guiding to finally draw some preliminary conclusions. Tuckman's (1965) group development model will serve as a guideline for exposing key issues to consider in each stage.

Working places as learning spaces

A search of the growing literature on learning spaces reveals that transnational and transdisciplinary research networks have so far escaped the attention of those scholars who have been adopting this particular perspective (Maslo & Lunardon 2015). Furthermore, it becomes evident that the understanding of what exactly learning spaces are and how the concepts are constructed and used differs in the literature available (e.g. Kolb & Kolb 2005; Solomon et al. 2006). To analyse learning processes and scholarly inquiry within transnational and transdisciplinary research networks, the authors propose the following definition:

Learning spaces are such spaces equipped with the property of generating, eliciting, stimulating, facilitating, fostering or enhancing learning. They are spaces we are sporadically visiting, constantly inhabiting and sometimes consciously searching for. In fact, they hardly ever can be simply found. They are no ready-mades; spaces specifically designed for that purpose remain rather the exception than the rule, and

we are inclined to rather call such pre-established settings places. Learning spaces have to be actively shaped and constantly reshaped to elicit learning, if not created and reinvented at all.

It's the learning effect that counts, and the primary question is which properties of a particular environment, social or individual configurations are setting it in motion, maintaining it or leading to it. A further question is which dimensions and facets this learning is encompassing or extending to.

According to Kersh (2015) individual learning processes in, at and through work can be split into an individual, an organizational and a spatial dimension. The first dimension focuses on the role of the individual learner. The second refers to the opportunities and constraints provided by the institutional framework, while the third dimension relates to workplaces in their property of providing potential learning spaces to be shaped, utilized and put to work by their inhabitants. Research networks can be regarded as paradigmatic examples for such learning to take place.

This gets even more evident when the concept is broken down into further relevant facets: physical, virtual, affective, cognitive and social spaces. Depending on the people involved, their knowledge, skills, values and attitudes, the nature of their task, the tools they use and the working conditions, these particular facets will be overlapping to some extent.

Figure 1 illustrates the five facets of learning spaces that appear most relevant. The physical facet (bottom left) can be captured easiest: learners are located within specific surroundings. This facet is more concrete than the virtual facet placed on top, just as the affective facet (bottom right) – dealing with emotions and sensual experience – appears more concrete than the cognitive facet. The cognitive and the virtual facet both are more abstract. While the latter (top left) – with the learner immersed into virtual spaces – still can be located, the cognitive facet (top right) does not easily allow learners to sense or place the learning anywhere and anyhow.

However, the social facet (depicted as an overarching circle in the centre in Figure 1 is interwoven and indeed penetrates all of those aspects. It remains the principal feature that orients learners to their physical, affective, virtual and cognitive facets, necessitating participants to shape and adapt them in order to set learning in motion. As Berger and Luckmann famously put it, "[i]n order to maintain subjective reality effectively, the conversational apparatus must be continual and consistent." (Berger & Luckmann 1966: 174)

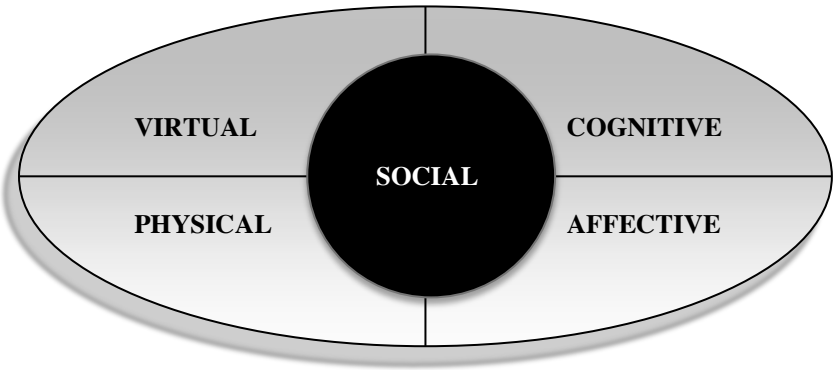

Figure 1: Five facets of learning spaces

In today's world, working environments are increasingly transcending their physical workplaces and institutional affiliations. Going along with global mobility, overlapping networks and the omnipresent connectedness, participants in transnational and transdisciplinary research missions are particularly dependent on more than just one workplace. Beyond that, in the research tradition on workplace learning, the term 'learning spaces' implies a shift from 'where' to 'how' learning is taking place, a shift that has preceded the adoption of that particular concept for quite a time.

To deepen the understanding on how transnational and transdisciplinary research networks work on the site and virtually and thereby move within the five facets of learning spaces, Tuckman's theory of group development, introduced in 1965, has been applied to the collected experiences of the authors. If essentially dealing with a social system, transnational and transdisciplinary research networks, just like any other groups, have to pass the stages forming, storming and norming in order to come up with real performance.

Forming: As insecurity prevails among the participants in this initial stage and relationships still need to be established, all eyes will be on the facilitator who is facing the expectation of directing the group to a common goal. Beyond orienting the participants towards the tasks to be addressed, s/he also should provide opportunities for participants to establish relationships with each other.

Storming: After participants gained confidence, conflicts and polarisations will initiate the second stage of group development. Participants need to clarify and will start questioning presumably established relationships and task requirements.

Norming: As storming will necessary lead to some participants exceeding boundaries and breaking unwritten rules, an agreement has to be found on how to relate to each other, and what to avoid when doing so. Open exchange and acceptance characterise the third stage of group development. Participants openly share their views, jointly develop new standards and find agreements on the roles and functions everyone will assume – formally or informally – in the next stage to follow.

Performing: It is only after all of these predominant tasks are accomplished that a group can be expected to concentrate on its task, and is propelled to coordinated action which, along with the implementation of ideas, drives the fourth stage of group development. Participants rely on the structure agreed on and nothing prevents them from pursuing common goals.

Ultimately, this opens the way for expanding the learning spaces beyond shared physical places and can even extend to non-places when researchers on the move are using every place, which offers the right conditions to work no matter where they are. Therefore, non-places also have a considerable impact on the research process. Those morph into social, cognitive, affective, physical and virtual learning spaces and create a connection with the research network.

Shaping working spaces

Research groups are a common feature in the academic arena. Nevertheless, transdisciplinary and transnational research enterprises are rather the exception than the rule. In this particular case, researchers do not simply decide to work together to develop and conduct a common research project. Such research groups need time and resources to develop: Either researchers are well acquainted and wish to engage in joint efforts, or they meet each other at one occasion and decide to collaborate on a topic and eventually include some more researchers to accomplish their mission. In some cases, a loose network, designed to bring all resources together to start a new research project, already exists. It can be open, or not open at all, to welcome new members.

To initiate a research network, a physical learning space allowing members to meet face to face will mostly be needed, particularly at the beginning. Members will have to experience that they will be able to build on common ground. Therefore, the first challenge lies in attracting researchers with common or at least overlapping

research interests, participants sharing methodological preferences or expecting to complement each other in terms of their expertise. Choosing the right channels to share individual and collective research work and to attract or inform key stakeholders in the network's area of interest will facilitate the members in their attempt to find common ground.

Within a transnational and transdisciplinary research network single researchers will need to get acquainted with a multicultural and – to some extent – multilingual working environment. Most likely they will have difficulties to find their place within a group consisting of researchers from various scientific communities. Considering these difficulties it is worthwhile to include people with a cosmopolitan attitude, who are open-minded and have interests beyond their own disciplines, research areas and expertise.

The dark side of this recruitment strategy is that it is likely to attract researchers who share the attitude of smelling opportunities. Such members will typically be quite busy, they might need to plan in the long term and sometimes find it difficult to stick to deadlines, whenever new opportunities are unexpectedly catching their attention.

Sometimes, it might therefore be preferable to use synergies by building a collaborative research group around existing networks who share similar cultures and practices. Nevertheless, success in the social dimension of transdisciplinary collaboration depends on the ability and willingness of members to relate to researchers belonging to different disciplines and research traditions, and to engage with them, constantly searching for mutual understanding (Bergmann et al. 2012: 45). Research groups are – and actually need to be – contested spaces, but – glancing at Figure 1 – one can imagine that such contestation has to be lifted to the cognitive space. If it is merely affective, this will put the network in danger of losing its ground. A further obstacle for the research network to proceed is that some disciplines and research traditions are commonly considered more dominant than others. In a truly transnational enterprise, the informal power of individual members thus needs to be balanced.

After having mastered the challenge to find the right people to work with, both financial and time constraints often make it impossible to meet on a regular basis or even to plan face-to-face meetings at all. This is a serious obstacle; as such meetings can work miracles. They allow participants to 'smell' each other, to personally engage with colleagues on the site, not least in the informal setting – during coffee breaks, lunches and dinners – which virtually cannot be overestimated in terms of its capacity to sustainably shape the research network. Social activities prepare the ground for shaping affective learning spaces which allow its inhabitants to develop trust and start negotiating basic attitudes, which at best should be shared among all research network members over time.

Only an atmosphere of trust allows researchers to fully engage in discussions and fully immerse and engage in cognitive learning spaces. As most of the challenges within the cognitive learning space root in self-perceptions, beliefs and understandings of every single researcher self-reflections might be encouraged within the group. Moreover, transdisciplinary exercises should be initiated, as those can transcend the boundaries of disciplinary learning spaces. To find common ground in a transnational and transdisciplinary research network is an intense and time consuming mission, as researchers mostly face the difficulty of having been socialised in particular research traditions. Communication is crucial also for working in a group with colleagues who hardly all share the same native language. For newcomers to transnational and transdisciplinary research networks it might be particularly challenging to develop a transnational attitude and a transdisciplinary tone. When addressing colleagues, misunderstandings of verbal as well as nonverbal communication acts might be rather the exception than the rule, and they might lead to considerable confusion. The challenge to work within different academic traditions and to open up for previously unknown concepts demands researchers to actively listen to each other and to keep their minds fresh and open. Therefore, an inviting environment (physical and/or virtual) where research and ideas can be openly shared and constructively discussed is a key ingredient for success in such contexts. If opportunities to relax and celebrate milestones which have been accomplished by the group can be provided occasionally, this certainly facilitates the group process.

A research network might also find it challenging to choose adequate ICT tools for different purposes, to build its virtual learning space and use it efficiently. Information flows need to be organized in a way that will be easily accessible to all (non-)members. To accomplish this task, it might help to draw on experiences of all members and to rely on those channels preferred and constantly used by various members, including social media platforms and messengers, such as Facebook, Research Gate, WhatsApp, Skype or Line to reach out to every member and to avoid having to wait for delayed responses.

Finally, special consideration should be given to the tasks and responsibilities of a facilitator. As good leadership is generally hard to find, and scholars rarely receive training in this regard, researchers are typically hesitating to take over that honourable and mostly unpaid duty with open hands on top of all other responsibilities they might have. Nevertheless, a research network needs good governance to sustain over time and to ensure its performance. To reckon the experiences of the authors, a research network should look out for a member who has previous experiences in leadership and voluntarily likes to take up the tasks and responsibility of a facilitator. A facilitator with skills to manage collaboratively might make the difference between success and failure in transdisciplinary efforts.

S/he will be the one to direct the network to a common goal, to support the establishment of relationships within the network, to provide orientation to its members and propel the group towards agreed-upon action. To move on to the next stage of group development, such facilitator needs to provide an environment where members can succeed in forming a research network and can be assured of continuous actions. Meeting face-to-face in order to initiate this process and accomplish its task can be considered a precondition in order to take the next step of the group's development. A facilitator also needs to be aware that further meetings need to be scheduled when the network intends to expand, as the delicate task of including new members might draw the research group back to its initial stage.

Being tempted by the tempest

After the research network members have gained confidence they will – quite explicitly or rather implicitly – start questioning the established relationships and task requirements. The group has developed into its next stage: storming. Particularly in transnational and transdisciplinary research networks, in which the diversity among members is critical, such polarisation can easily lead members to retreat from the common mission. In this stage, members might defend their own disciplinary paradigms and advocate their own ideas, research topics and preferences within the network.

In this stage, finding a real-world problem to engage with is preferable to basing the group's work on theoretical assumptions. In transdisciplinary research, the primary obstacle comes from a lack of common problem focus (Young 2000). Without such a focus, researchers from different disciplines typically spent a lot of time discussing terminology, definitions and assumptions in the single disciplines without integrating them or including the perspectives of stakeholder outside academia. Enduring debates on different intellectual styles and cultures can create barriers for effectively working in a team.

The task the group is implicitly engaging with in the storming stage encompasses clarifying roles, functions and preferences, including potential contributions of every single member. It is therefore recommended to accept and give room to fights and arguments among the members and to listen carefully to the diverse inputs, including non-scientific stakeholders. While conceding room to such arguments, counter-arguments and debates, the facilitator should act as a model using simple and commonly understandable language, thereby inviting members in, encouraging them to openly share their views, including transparency within the differences and the option to agree to disagree on a number of issues within the group. Facilitators

can, in and by their function, provide space for members to show their own potential and to prepare the way for proposing productive solutions to some of the issues discussed and viable strategies to proceed further as a group. Moreover, they can support arguments and proposals that help to balance informal power relations, to integrate different aims and needs and to undermine such rules or concepts that would limit or restrict the range of thoughts and ideas that could provide or inspire potential contributions to the network's mission, thereby keeping the door open for creativity to flow in and, at the same time, encouraging all members to step out of their own box.

As dealing with conflicts is not everyone's cup of tea, individual members will have difficult times coping with the tensions occurring. Therefore, the facilitator will have to actively engage in the group process. If social activities can be arranged, this will help to clarify relationships and reinforce trust among the members. After all, it can be quite challenging to stay open minded and innovative when being overwhelmed by the tempest. ICT tools might help to create distance and structure, but they also bear the danger of further escalation of conflicts. In this case, encouraging the participants to review emails, chat protocols or forum contributions to track potential misunderstandings, can facilitate the group to move on to the next stage.

Finding the right bricks to build

When the group moves to the next stage new challenges arise, necessitating participants to develop norms and standards for collaborative work.

As open and respectful exchange provides the ground for the joint development of such group norms, the research network can build on its established communication channels to find ways and provide examples of communicating with courtesy and respect. In the context of transnational and transdisciplinary work, special attention needs to be paid to balance the influence of single disciplines to initiate constructive and critical dialogue continuously within the research network. In his work for the UNESCO, Lattanzi (1998) pointed out that transdisciplinary knowledge could be understood as intellectual outer space. The transforming process of synthesis and partial alignment of ideas and perspectives are of key importance for transnational and transdisciplinary research. In a similar fashion, Pohl and Hadorn (2008: 112) argued that diversity of perception or perspectives should be addressed as a first step of mutual learning and integration for transdisciplinary research. This seems particularly promising as it allows the group to find forms of collaboration and means to integrate a whole set of such forms

which will further on determine the structure and intensity of exchange among researchers and external stakeholders.

Facilitators can well propose some norms, but they need to set a good example when communicating in the group in the first place, encouraging participants to follow their example and carefully reflect basic principles of good communication. Furthermore, they can contribute to create an environment that facilitates an attitude of learning from each other, catch the interest of members by triggering a transition from mere meeting to collaboration. Meeting face-to-face is highly recommended in order to accomplish that task, as shared norms are essential for the group to proceed to its best performance: "the individual may resort to various techniques of reality-maintenance even in the absence of actual conversation, but the reality-generating potency of these techniques is greatly inferior to the face-to-face conversations they are designed to replicate. The longer these techniques are isolated from face-to-face confirmations, the less likely they will be to retain the accent of reality." (Berger & Luckmann 1966: 174-175) For the work that is supposed to flow out of it in the next stage, norming can be considered the most intensive stage of group development.

Another challenge lies in the expectation to make joint decisions while ensuring participative decision finding and procedures. Active listening needs to assure that the diverse points of views, ideas, key arguments and counterarguments are simply ignored or lost and that they would at least appear in the records for further discussion. This will contribute to establishing a norm of mutual understanding, which will be the basis for constituting new structures. Nevertheless, this is all but a simple task to accomplish as problems of mutual understanding may arise from different research backgrounds. Therefore, enough time needs to be reserved to clearly frame and eventually reframe such problems.

One could start this process by constructing a competency profile within the group and propose appropriate research methods, which could allow participants to engage in research activities by building on common ground. Conducting qualitative and participatory research is particularly challenging, as it tends to expose different understandings, perspectives and approaches much more than quantitative research, along with conceptual and terminological issues. Accordingly, it relies much more on physical learning spaces where research network members can share, discuss and creatively develop their work.

A group also can start by stating a problem (which is preferable to a theory based on a single discipline) and to consider external stakeholders to check whether, among the participants, everyone can relate to a particular problem and those key actors having a stake on it. Identifying the right research question and negotiating conceptual backgrounds and appropriate research methods will appear quite challenging if the researchers are tight to one's own disciplinary and institutional context. In any case, mutual understanding will be key to accomplish the task at

hand. It is a prerequisite for structured collaboration in which perspectives and competencies of all members need to be integrated.

Building trust and satisfaction within the research group will remain the main purpose of initiating norming. This will allow the participants to reach out to each other and to find a common mission, one bridging their individual disciplines and preferred research practices.

The establishment of a code of ethics supports the process of building mutual trust and understanding and at the same time provides guidance for the work within the group. It might include some principals on how to communicate within the network; how relevant information is shared among all members, which ICT tools are used, and how; how research will be conducted, research data will be shared, and findings distributed and discussed. In order to address potential worries about intellectual property, an agreement needs to be found on which guidelines to apply for authorship and ownership issues (including access to data-bases) within the network.

Moreover, an agreement on roles and functions of members should be initiated along with an agreement what good leadership implies and commitment means. There will always be times in which not everybody involved in the network will be able to engage in every single activity, or to catch up with particular deadlines, and times in which some members will engage in the delicate task of simulating activity. If this phenomenon spreads within the network, or such an attitude can be observed on different occasions, this issue needs to be addressed quite straightforwardly. At this point, it is preferable to meet and to start a norming process with the aim to develop a norm of honesty within the group. The insight that there will always be circumstances that make it difficult for individual members to engage on equal terms, or in all activities envisaged by the network, will facilitate that process. This is essential to avoid the free rider problem to arise, with the likely consequence of conflict and demotivation spreading among the network members.

What makes it easier to constructively address some of the problems mentioned in this section is if every member has a team to rely on at his home institution. Work and responsibilities can be shared among the team members, and they can engage in occasional discussion whenever questions are raised within the network. This would also help to assure continuity of those participating in the network as a whole, which is a key issue for all groups to make it to the performance stage. Combining physical and virtual learning spaces can further support continuity and allow those participants missing important occasions to catch up with the latest developments.

This shows that in order to make an impact as a research network, the researchers need to develop a new set of skills within the group. This will apply surfing – and shifting among – all facets of learning spaces. The group will be occupied with everything else than performance, immersed in affective space, until

it agrees on basic standards and norms, which ultimately will open the way to performance. But one also needs to be aware that the group can fall back at any point, storming to clarify the positions of everyone involved, and the norming game will have to start over again when particular circumstances or issues that will be raised at that point will be demanding additional or more specific norms to be negotiated within the group.

Inhabiting diverse places to work together

Having managed to overcome the challenges of forming, storming and norming the researchers will be enabled to make use of their full potentials by inhabiting diverse places to work together. When this can be observed, it is indicating that the group has been moving to the performance stage.

Still, a number of constraints will keep the research network from straightforwardly addressing the agreed-upon tasks. Members will have to put a lot of efforts into their collaborative work to stay energized from the launch of the research project throughout the distribution of the research findings. The more intensive collaboration will get, the more the social, cognitive, affective, physical and virtual learning spaces will overlap and align. Affective learning spaces will pop up regularly throughout the research process, as researchers have to deal with stress, exhaustion, misconceptions, but also with moments of joy and satisfaction.

Thus a challenge lies in a well-structured and easy flowing communication, which is not only complex, if colleagues sit in their offices on different continents, but also, if they sit next doors. A lack of good communication closes down every research project no matter of its originality and greatness. Therefore, a lot of energy needs to be spent on keeping the conversation going and continuing to build ownership in terms of the group process and contents.

The ICT tools introduced and established within the network can support the continuing conversation. It will sometimes be enough to drop a small note via a messenger to bring an issue to the attention of other members. It still might be difficult to fine-tune the amount of messages not risking to lose the interest of others. In any case, an overload of emails should be avoided. If this is not possible, key words in the heading could be agreed upon to indicate the purpose or the expectations (e.g. to do, update, research materials, for discussion, urgent reply etc.) an email carries for the readers. More generally, the group has to find ways to choose communication channels wisely, which is highly depending on the purpose and the task to be accomplished. Sometimes it also might be fruitful to arrange a face-to-face or an online meeting and discuss the next steps to take there. Nevertheless, arranging an online meeting while working in different time zones can be challenging too. Normal working hours easily extend into early mornings and late

nights. However, if the time difference is well-managed, it can also be of good use, particularly when a deadline is approaching and researchers can work in day shifts sending a document back and forth without missing out one single night.

In the performing stage, members will take the responsibility for work packages and dedicate time slots to accomplish those. Again, these need to be fine-tuned in the group and clearly communicated. Freedom, along with time and financial resources provided by the home institution to travel to meetings and conferences would facilitate full engagement in the research process. As the lack of financial and time resources makes it almost impossible to create and sustain a transnational and transdisciplinary research network and to conduct joint research, one of the hardest challenges mostly lies in securing funding for research projects and meetings.

As most researchers have full agendas and an endless list of tasks, necessitating them to balance their research activities, teaching and administrative duties at their workplace and beyond, to successfully sustain over a longer period transnational and transdisciplinary research networks equally need to rely on local support – and consider ways of mobilizing such resources (e.g. by including colleagues and students) to share workloads, back each other up, develop ideas and strategies further. The value of having such a team on the spot cannot virtually be overestimated, as it also holds a potential solution to the lack of acknowledgement one typically gets within one's institution, by broadening one's alliances.

In the performing stage facilitators hardly can lean back. Most importantly, they should concentrate on the delicate task of managing diversity among the members, making sure the tasks and responsibility are collectively shared, rewarding individual members, teams or subgroups within the network for their valuable inputs and strong commitment, monitoring outcomes corresponding with the established norms, paying attention to the agreed timeline and the delivery of work packages, of organizing celebratory events, when the research network has achieved its goals or significant milestones, and of making sure activities and outputs are visible to all members as well as external audiences and stakeholders.

As there are only a few journals that provide a forum for transnational and transdisciplinary research, the distribution of research findings brings the next challenge, one in which the facilitator again will have to shoulder some responsibilities. The performance indicators by which academic contributions are commonly rated within scientific communities tend to speak the language of single disciplines, so that the voices whispering at the boundaries and intersections of established (common) places hardly can be heard. Moreover, a potential problem for projects transcending national boundaries arises from the fact that particular journals might hold a different place, or no place at all, in the national rankings on which researcher's performance is measured in the single member's countries.

These constraints need to be taken into account when a publication strategy for the work and outcomes of a transnational and transdisciplinary research network is considered, as it remains essential for its members to share their insights and achievements, to make their work visible and attract potential funding or new members, keeping in mind the latter might bring the research network back to the initial stage.

Conclusion

Although the 'spatial turn' in social sciences and humanities can be dated back to the 1980s, the concept only recently got vibrant in educational sciences. Looking closer into our field of inquiry, higher education and research in education and learning, the value of space as a dimension to go beyond the localisation related to place has been recognised. The present contribution tried to show how this idea can be fruitfully applied to a context which has not yet been considered in the growing literature on 'learning spaces': transnational and transdisciplinary research networks.

This paper argues that learning takes place at the intersection of the facets of learning spaces depicted in Figure 1. One conclusion, which tentatively can be drawn from the observations, is that one most likely finds a network at the best of its performance where virtual and physical spaces overlap, and whenever affective and cognitive learning spaces merge, with all of those facets converging towards the social space, which is linking them. In all earlier stages of group development, single contributions – however cognitive they might be in terms of the intention of the contributors – hardly can avoid affective connotations and consequences, and the group will be highly dependent on physical places in order to proceed.

The main task – and indeed the main challenge – of such research networks is to keep the conversation going. As Berger and Luckmann put it, "the conversational apparatus must be continual and consistent." (Berger & Luckmann 1966: 174). The central role ascribed to communication flows can be easily reworded in the language of systems theory, e.g. by relying on the way social system are defined and conceptualized by Niklas Luhmann (1984), with communication acts succeeding each other. Similarly, the social facet of learning spaces essentially consists of communication, generating all kinds of consequences in the psychological arena of those who are linked into, connected by, and finally interconnected through those communication flows: "Generally speaking, the conversational apparatus maintains reality by 'talking through' various elements of experience and allocating them a definite place in the real world." (Berger & Luckmann 1966: 173)

A further task consists in channelling the energy of (at least some of) its individual members towards the common research interest and to propel it to

achieve common goals. This, of course, implies to pay particular attention to group dynamics. It also brings the role of the facilitator into the picture, a role that is essentially encompassing the delicate task to manage diversity, by maximising its potential impact and mitigating potential obstacles. To support group development, a facilitator not only needs to balance the stakes and contributions of individual members, s/he also has continuously to keep the balance within the group as a whole. Initially, s/he will have to take over most functions a group needs in order to proceed, while when other members assume a function s/he will have to step back, to give room for others to fulfil tasks and assume roles s/he formerly had taken on by him/herself.

A research group is expected to gain independence of spaces to the extent that it 'prefers' to continue to concentrate on storming or it reached the peak of its performance – which does not mean that it couldn't fall back to previous stages, for instance when a network is expanding its membership. Meeting physically, face to face, and in an appropriate setting thus resulted to be particularly important in two stages of group development: when forming the group, and in the norming stage, which is the one proceeding real performance.

Storming also can take place in virtual spaces and indeed is even likely to happen naturally once such spaces are inhabited by the participants of a research group. This is somehow building pressure to meet. When no face-to-face meetings follow for a long time, this will make norming an even much more difficult only task to accomplish and one which is even more unlikely to be achieved in virtual spaces only. And norming continues to be a crucial step to take in order to come up with a network's real performance and to realize its full potentials. Once a research group made it to the performing stage, physical places and meetings are somehow losing their relevance. A network will work independently, gain autonomy in terms of times and modes of collaboration.

Cyberspace can be considered a non-place, a place with almost no limits where one easily gets lost. In the performing stage, it still can be used to advance learning. Since its introduction, dating back to 1989, the World Wide Web has indeed provided powerful means to reshape the research world and to transform – and develop new models of – learning and conducting research. The research society has been affected in terms of collaboration, participation, communication, intellectual property, content, and information. Researcher's workplaces have been expanded into the virtual space. The digital devices are advancing day-by-day and support researchers when transforming their workplaces into learning spaces. Particularly transnational and transdisciplinary researchers are increasingly utilizing these tools to develop their work further. Learning in, at and through work is no longer tied to a specific place but can – and increasingly will – happen on the move.

Other non-places such as hotels, airports, train stations and shopping centres become relevant when working in a transnational and transdisciplinary research network as the researchers smartphone, tablet and/or laptop is carried around and used by them whenever they find a place suitable enough to work, albeit it is only standing in the line waiting to board the aircraft while reading and answering emails. Thus, such (non-)places need be considered when analysing the 'how' of learning in, at and through work. Referring to Marc Augé (1995) non-places are distinguished by the notion of passing by, lingering over and consuming without developing any social or emotional bond with people and/or places. This bears more than a casual assemblance with what Granovetter (1973) famously coined "the strength of weak ties". We even would claim that it is expanding his account – from the social world (real people) to a much more manifold environment, which is incorporating physical, cognitive, emotional and motivational properties – much in the fashion of Bruno Latour's (2005) theory. Therefore, such places are welcoming guests, passengers, shoppers etc. with the promise to reduce emptiness, to speed up waiting times and to set minds and souls in motion. Moreover, not missing out on rewarding all kinds of (re-)searchers by proven their assumption might be right: empty places can – as they are empty – be filled with everything, not least creative ideas and ground-breaking thoughts.

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The experience of adult learning professionals with workplaces as learning spaces

Theo van Dellen and Döndü Yurtmaz

This article uses participative photograph interviews and Dynamic Concept Analysis to study the how, what and why of learning in four types of workplaces by adult learning professionals. The research was carried out under the initiative of the research network Workplace Learning, which is part of the Asia-Europe Meeting (ASEM) Lifelong Learning Research Hub. The study aimed at increasing the awareness of the qualities of workplaces that either restrict or expand individual professional learning processes. Workplaces as learning spaces may facilitate the experience and achievement of personal and professional agency through different qualities of various places.

Keywords: adult learning professionals, informal learning, adult learning axioms, qualities of workplaces, learning spaces

Introduction

The professionalization of adult learning professionals such as teachers, trainers, coaches and counsellors is somewhat problematic across Europe. In many countries, professionalization does not occur either formally or systematically (Sava 2016). Therefore, the capabilities of adult learning professionals often grow through informal learning and professional development in, at and through work. This means that adult learning professionals may be learning on a daily basis from experiences they have in various spaces during their work. These 'workplaces as learning spaces' of adult learning professionals are the focus of this contribution.

The part played by informal learning and continuing development of the adult learning professional is well recognized but little understood. The same can be said for the notion of adult learning itself in, at and through professional work. Therefore, in this article the main question is: do adult learning professionals

experience workplaces as learning spaces and how, what and why are they learning 'informally' with respect to their work in these spaces. To address this question, the following theoretical aspects of the experience of adult learning professionals with learning at work are successively introduced: 1. the experience with learning in, at and through work of the adult learning professional, 2. workplaces as learning spaces, 3. from static to dynamic workplaces, 4. home as a workplace and learning space, 5. learning spaces on the move, 6. learning in a relational context, and 7. subjectivity and the emotional, motivational and biographical character of 'workplaces as learning spaces'.

In Europe, the notion of the 'adult learning professional' does not really exist (Bron & Jarvis 2008). However, there are many professionals who work with adults as clients to teach them personally, vocationally or otherwise. Considering the state of knowledge today, it is a difficult task to recognize adult educators[2] because they do not always identify themselves as such for various reasons related to the diversity of the background disciplines (Bron & Jarvis 2008). Although there are and there have been some initiatives in Europe at the academic level, the discipline of 'adult learning professional' is still in its infancy. This makes it of special interest to study the informal learning and continuing vocational development of adult learning professionals. Thus, this article will discuss the experience of adult learning professionals with workplace learning.

The phrase 'workplaces as learning spaces' means that work and the process of learning come together and are interdependent in the workplace. Kersh, Waite and Evans (2012) suggested that the experience with learning in the workplace is related to the perception of the space in which the learning takes place. In the literature, two opposing perceptions of the workplace as learning space are found. Typically, recent sociologists, particularly those using the theories of Foucault and Bourdieu, emphasize that workplaces are by definition not neutral, with each possessing an ideological character. At the least, this restricts individual learning and development opportunities in workplaces. In contrast, recent studies by Evans et al. (2006), Nonaka and Takeuchi (1995) and Livingstone (2002) showed that workplaces offer individuals the opportunity to learn and develop. This learning is called 'informal' because there is no formal curriculum and the learning, in essence, is not intended by somebody or in some way, but is the outcome of work-dependent learning processes in the context of the execution of actual labour (Ellström 2011).

Over the last decade, there has been a shift in what is considered a 'workplace'. This means that the workplace as one static place to work (or learn) has gradually changed such that work may now occur in various locations, in which learning for

[2] 'Adult learning professionals' and 'adult educators' are used synonymously in this article to refer to all types of teachers, trainers, coaches and counsellors of adults (over the age of 26).

work may also take place. These may include, for example, a non-static office space at work or at home, or various other locations at which the work is done externally, 'touch down' places (Felstead & Jewson 2000) and virtual spaces (Kersh, Evans and Waite 2012). Felstead and Jewson (2000) give reasons for this generally recognized shift, namely technological developments and the further individualization and professionalization of work. Moreover, these authors suggest that in the long term the various workplaces have consequences with respect to the social and relational behavior between employees (and management) as well as the psychological disposition of the employees (Felstead & Jewson 2000). These consequences may also be responsible for the characteristics that restrict or expand (Engeström 2011) the workplaces as a learning space.

Home as a workplace has become increasingly important insofar as it is considered child friendly and future focused. Moreover, it is promoted in the media (Felstead & Jewson 2000). Nevertheless, the status of working from home does demand the requirement to combine the public and the private. Employees must regulate the borders between the household and the working world. This demands skills such as personal negotiation, self-discipline and self-reflection on one's work identity (Felstead & Jewson 2000). Our research is particularly interested in the learning for work opportunities at home because adult learning professionals often have part-time assignments and work at home quite regularly.

In 2012, Felstead and Jewson defined the notion of the workplace 'on the move'. More recently, professionals have become even more flexible and mobile, and are able to use all their travel and work time as efficiently and effectively as possible, as well as potentially learn in the process. The digitalization of work has created opportunities to work and learn virtually using various devices such as mobile phones, laptops or tablets, at almost any location.

With the 'community of practice' concept, Wenger (1998) emphasized that the social aspect of work may be an explicit factor that increases learning opportunities at work. He elaborates on the importance of cooperation in promoting the sharing of knowledge and experience in communities of practice. The opportunity to communicate about work-related individual thoughts and discuss one's own and others' experiences brings awareness and conscious reflection into the work situation. This internal discussion and social communication about work may play an important role in the cognitive dimension of learning (Baumeister & Masicampo 2010). In a relational collective context, the opportunity to be confronted with 'new knowledge' may be increased, but there is a question concerning whether the individual professionals feel the necessary amount of disjunction (Jarvis 2007) to accommodate or even transform their biographically developed knowledge, skills and experiences accordingly. The 'social' aspect as such may be too weak and needs

a 'relational' context, which means that the issues of work are value-driven and create engagement and involvement between individuals in the community.
Adult learning, particularly in workplaces, is not a simple issue. It is only quite recently that the issue has been considered worthy of a publication, with the first Handbook of Workplace Learning published in 2011 (Malloch, Cairns, Evans & O'Connor). The handbook problematizes and discusses various theories about the concepts of 'work', 'place' and 'learning', both separately and in various combinations. In summary, three histories of theories on workplace learning are presented, emerging from psychological, sociocultural or postmodern theoretical grounds (Hager 2011). In combination, these various bases reveal the complexity of learning in, at or through work. In the figure 1. below this complexity is conceptualized by Van Dellen and Heidekamp (2015), illustrating the psychological, sociocultural and postmodern aspects of learning for work in a framework with three layers. The central process layer of learning (individually) is depicted in the middle. This grows consciously or unconsciously out of 'the motivation to learn for doing the work in a better way' (Holton 2015).

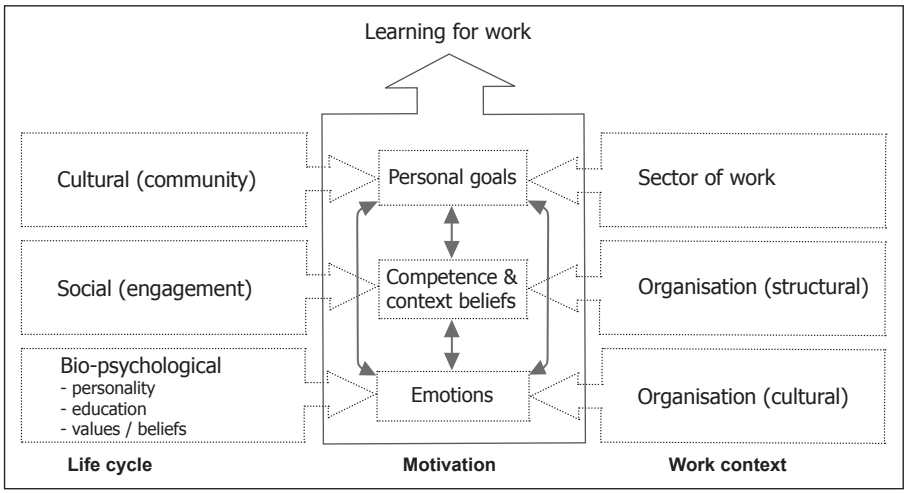


Figure 1: The "Learning for work" conceptual framework (Van Dellen & Heidekamp 2015)

The central process encompasses emotions (physical), beliefs about one's own ability to become competent and beliefs about the support from the context. Finally, personal goals for doing the work in a different and presumably better way (more efficient and effective?) belongs to the central evaluative motivation process

preceding adult learning for work. Thinking this framework through leads to three implicit axioms that are plausible in the case of adult learning for work.
The first axiom concerning the when, why and how of adult learning is that people exist as alternating conscious and unconscious, evolutionary, bio-psycho-social beings. In other words, each individual's existence occurs as multiple interactions between body, mind and social engagements with others. To put this another way, everyone thinks, feels and acts in constant dialogue with themselves and with their environment. This biological, psychological and social model of human beings is a humanist interpretation of subjectivity. This means that every human being shares this capacity with all others and, unlike all other animal species, they are or at least can be or become conscious of themselves as this kind of being. Thus, being human can be construed as if it were a personal learning responsibility of the individual in the various contexts with which they relate. As the philosopher, Peter Sloterdijk, stated even more compellingly: 'You have to change your life'.

The second axiom is borrowed from Jarvis (2009). It concerns the idea that, in a scientific-philosophical sense, the best option is to rely on a non-reductive monism to understand as well as to comprehend the individual's contextually based adult learning responsibility (Jarvis: 2009). In this respect, Jarvis quotes Maslin (2001) extensively when describing this monism:

> It is non-reductive because it does not insist that mental properties are nothing over and above physical properties. On the contrary, it is willing to allow that mental properties are different in kind from physical properties, and not ontological[ly] reducible to them. It is clusters and series of these mental properties which constitute our psychological lives …. Property dualism dispenses with the dualism of substances and physical events, hence it is a form of monism. But these physical substances and events pose two different kinds of property, namely physical properties and, in addition, non-physical, mental properties (Maslin 2001: 163).

As an axiom this monism is quite plausible. It provides a humanistic model of how people 'are' in a fundamental universal sense, although many people may think of themselves differently, for example, in terms of a more naturalistic monism (such as that attributed at times to Nietzsche). However, this axiom is also important to the understanding of why, most of the time, people do not undergo significant learning. In this respect, you may hear them say that they 'feel' unable to be disciplined, or to fight against the disruption to learning caused by their own bodily sensations and emotions.

Recently, we have developed what might be a third axiom. Adult learning can be considered, on the one hand, as something that is very personal; while, on the other

hand, it might be regarded as something highly contextual and universal. This characteristic of adult learning suggests that, by definition, it should be considered in terms of an ambiguity concerning public and private interfaces, leading to the idea that adult learning is a transactional phenomenon between the two. The 'I' involved in adult learning is only half the story, there is also an 'Other' or even a greater degree of distance that could be called an 'Out(th)er(e)'. Thus, adult learning is not a matter of the engagement at one level or the other but of both occurring continuously and at once. For example, the expression 'I'm learning lifelong to feel free' states this clearly. It means: I am learning in order to feel myself free from myself and from the context that it could be considered that I should belong to. Thus, adult learning is something that, without a doubt, is situated in both a broader sociocultural context of other people and the specific circumstances of the individual. In this manner, in adult learning for work in particular, there is always something such as a claim to learn and this claim is never solely idiosyncratic.

To summarize, these three axioms mean that in essence adult learning in workplaces should be considered as something psychological and sociocultural and, at the same time, should also be considered from a point of view of postmodern theory. This may sound somewhat odd, but is it? Psychological theory considers the 'what' that individuals are learning about to be 'things' (Hager 2011). In other words, they know what it is that they need to learn and they are able to learn it. However, in a sociocultural sense the 'what' comes from the actual situation, based on the context in a historical and cultural sense. The 'what' is 'known' through and by the collective context and leads individuals to learn in certain directions. Finally, postmodern theory tells us that the 'what' is not just something that is within the subject or completely separated from them, but exists through an actual ongoing interactive process, creates itself through time and lives by working with 'the actuality'. Thus, from a postmodern perspective this means that nothing is what it seems to be. The world is not something we are able to create at will. In fact, psychological, sociocultural and postmodern theories can be brought together, with each offering a specific understanding of the process of adult learning.

Data collection and analysis

To study learning in, at and through work, adult learning professionals were asked to participate in our research (the selection stopped with saturation). In the end eleven participants had a nodding acquaintance with one of the researchers and were as far as possible sampled through a combination of maximal variation and purposeful sampling. They were either employed or self-employed as a teacher, trainer, coach

or counsellor. The gender mix (8 female [F]; 3 male [M]) was typical for the occupational area. All of the participants were educated at a higher vocational or university level. Their functions were quite diverse, such as teacher, child doctor, special needs pedagogue, educational adviser, educational designer, grief counsellor and trainer. The ages of the participants ranged from 42 to 63, with work experience ranging from 4 to 21 years (one outlier had 40 years' experience).

The research was a case study mixed design with an explorative character. This explorative nature, however, was restricted by an empirical outcome that identified four workplaces that were approached as possible learning spaces. In this way, the identification of these four workplaces was theoretical as well as empirically grounded. The mixed design methodology consisted of a qualitative element, the participative photograph interview developed by Kolb (2008), and additionally a quantitative modelling part that used the Dynamic Concept Analysis (DCA) Model of Kontiainen (2002). Firstly, the experiences of the adult learning professionals with their own further personal and professional learning in various workplaces were collected through semi-structured interviews and visual aids (photographs). Secondly, using the DCA models, the researchers constructed the manner of learning of the adult learning professionals in various workplaces as learning spaces.

The research started with the semi-structured interview which had as input photographs taken by the participants. The interview questions concerned the following five topics: at first the generally experienced learning of the professional, and second their learning in four learning environments, namely 1. working at home, 2. working behind the desk at the official workplace, 3. working while teaching, coaching, etc. an adult, and 4. working on the move (as actually shown on the photographs).

For the analyses of the recognized characteristics of the 'informal learning' of the professionals in each recognized workplace, the DCA was used in a quite similar manner to the work done by Kontiainen (2002) and Evans, Kersh and Kontiainen (2004). Four categories of recognized characteristics were used: (a) the workplace as such, (b) the triggering workplace learning opportunities, (c) the atmosphere experienced (climate) and (d) the experienced learning outcomes. Within the four categories there are in total 10 concepts with 3 attributes each; for example, the first concept within the category of the atmosphere experienced concerns involvement which has the three attributes of 'high', 'medium' and 'low'. The following table presents an information matrix of the workplaces as learning spaces. In the Appendix I the relationships between the concepts and attributes are presented.

Row	Concepts	Attributes	1 a n b	2 a n b	3 a n b	4 a n b	5 a n b	6 a n b	7 a n b	8 a n b	9 a n b	10 a n b
1 2 3	1. Material	1a good 1n neutral 1b bad	X	a n b	a n b	a n b	a n b		a n b	a n b		
4 5 6	2. Sociability	2a large 2n medium 2b small	a n b	X	a n b	b n a	a n b	a n b	a n b			
7 8 9	3. Ownership	3a high 3n medium 3b small	a n b	a n b	X	a n b	a n b	a n b	a n n b			
10 11 12	4. Autonomy	4a high 4n medium 4b low	a n b	a n b	a n b	X	a n b	a n n n b	a n b			
13 14 15	5. Involvement	5a high 5n medium 5b low	a n b	a n b	a n b	a n n n b	X	a n b	a n b			
16 17 18	6. Interaction	6a active 6n medium 6b passive		a n b	a n b	a n b	a n b	X	a n a b		a n b	
19 20 21	7. Climate	7a positive 7n neutral 7b negative	a n b	a n b	a n n n b	a n b	a n b	n a n b	X			
22 23 24	8. Cognitive	8a high 8n medium 8b low	a n b	a n n b	a n b	a n b	a n b	a n b	n a n b	X		a n b
25 26 27	9. Affective	9a high 9n medium 9b low	b n a	a n b	a n b	a n b	a n b	a n b	n a n b		X	
28 29 30	10. Meta-cognitive	10 high 10 medium 10 low		a n n b	a n b	a n b	a n b	a n b	n a n b	a n b		X

- A cell shows the relationship between two concepts
- A row shows the attributes that have a Type-2 relation to the attribute in question

Table 1: Information matrix of 'workplaces as learning spaces'

Defining concept relations, “as her, is a highly value-bounded procedure and depends on the own knowledge, experience and values of the researchers” (Kontiainen2002: 75). How statements are presented in a cell is that f.i. in cell 1/3 (above): The better the material, the higher the ownership. In the Appendix I all relationships of the matrix are given explicitly. An example of a non-linear relationship is cell 6/7.

The analysis of the data started with the transcription of the recorded interviews. Following this, each interview was entered as a hermeneutic unit into the Atlas.ti program. The researchers also discussed and filled in a DCA evaluation form for each of the workplaces using these units. In each instance, the Noticing, Collecting and Thinking (NCT) model (Boeije 2014) for analysing data (Figure 2) was constantly kept in mind.

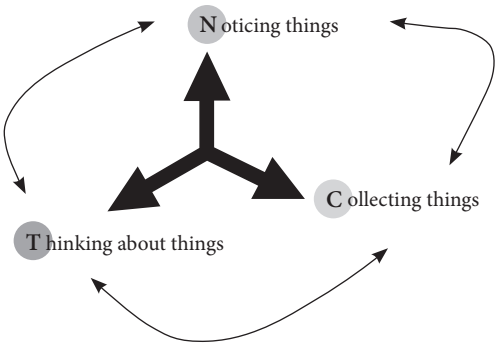


Figure 2: The NCT model

Results

The learning experienced by the adult learning professionals in general

Almost each and every adult learning professional admitted that he or she considered 'learning' to mean '(continuing) development' or 'change/growth'. For example:

> "Learning means to me that in principal your development continues" (AB).
>
> "It's important to do your work in a good manner, so you have to keep learning" (JB).
>
> "… learning is never something static as I feel it and it never happens in the moment itself" (JL).
>
> "… as I see it something changed in you, in your behavior, knowledge" (NvdS).
>
> At the same time, two participants said they:

> "… look back at an experience" (RA)

> "… often I think what went well and what can be done better?" (NO).

Finally, two adult learning professionals mentioned the role of the compulsion to learn:

> "You can't learn if you think it is compulsory" (JL).

> "Somebody can't push me to learn in a certain setting" (BO).

Concerning the context of learning, the adult learning professionals' responses indicated that most of them are able to learn in any possible context, as well as in relation to or in interaction with colleagues. An example of the first is:

> "I may have an insight while riding my bike" (NO).

A quote demonstrating the second:

> "So it is: when sharing thoughts, I may learn even more" (BA).

Three participants add that significant 'others' can be seen as models, masters or coaches.

> "And that person has been and still is a sort of master for me" (MD).

> "I think that I learn most from one of my coaches" (NvdS).

> "Modelling is very important for me, I think, but it depends on the content that has to be learned" (LJ).

The drivers of learning experienced by the adult learning professionals show a continuum across the participants. Learning starts with a sort of personal quest for competence. Two professionals formulated their drive as:

> "Learning to me is essential … this may sound heavy but it's my oxygen" (LO).

> "… I come closer to my inner source" (MD).

Some participants suggest there is a professional need to keep up and improve their performance constantly:

> "I find it important to stay competent in my work and so I need to learn always" (JB).
>
> "Learning means to me that in principal I'm developing further forever" (AB).
>
> "… increasing knowledge and skills" (BR).

The continuum ends with drivers that are problematically situated in the actuality of the workplace:

> "… there is a situation [in which] I'm working with a co-trainer who I experience as awkward" (MD).
>
> "I do have educational questions which I can't answer" (BA).
>
> "… meanwhile I'm thinking about an assignment I have to do …" (LO).

The final topic from the general part of the interview was the actual learning and outcomes that adult learning professionals experience and recognize as such. This topic was somewhat more difficult to discuss because it is not completely accepted or considered 'normal' for older adults to admit that they have learned something, especially when the learning is not formal nor materialized or conceptualized as knowledge-based. Or, to formulate this differently, for adults it may be quite difficult to admit that they lack the knowledge, instead defending their own meaning or 'the me' against the meaning of others (tacit, embodied or experienced knowledge). Thus, to start with, the participants' answers show that they usually connect learning with what may be called professional theory and knowledge (ultimately fitting with prior knowledge). For some reason, they overlook personal knowledge (Polanyi) as an outcome of their learning experience. However, at the same time, a majority of the participants mentioned the experience of feelings or emotions in relation to learning. These feelings range from happiness to anger and from excitement to helplessness. All of the 11 participants mentioned this sort of experience; that is, one that matters in an existential manner:

> "My behavior has changed, that's only possible when I have learned…" (BA).
> "…. because I was able to be amazed … I became so happy about my discovery …" (IH).

Learning experiences in the four recognized workplaces as learning places

Table 2 below summarizes the results from the interviews concerning the number of characteristics mentioned in relation to the 'moment of learning' experienced by the professionals and actually photographed. In addition to the plausible ownership, the identification ("This picture shows who I feel myself to be" MD) and functional characteristics of the home as a place to work (and learn), the experience of quietness and focus are also listed as characteristics of the home by some professionals and as characteristics that are rarely experienced in other workplaces.

> "At home I have much more quietness" (LO).

> "I was on my own. I had a clear focus" (NO).

Despite this quietness and focus, as in the other workplaces, the professionals may be faced with obstacles or strategy choices in relation to learning moments in the home. At their desk at work and while giving a lecture or providing training, the interaction with others (social) seems to be the significant characteristic in the moment of learning.

> "… in which workplace [do] I learn most? In the moment we have a cup of coffee together. Because then in an informal way there is much under discussion. And often this may go quite deep, lacking the pressure of an agenda" (RA).

At the same time, the participants mention occasions in which interaction negatively influences the drive to learn. This may be connected with the relative high number of obstacles and strategies to regulate learning while interacting (Table 2).

Topic	Characteristic (Code)	Home place	Desk at work	Lecture or training room	'On the move'[3]
Moment of learning	Spatial	5	5	7	2
	Identification	8	0	0	0
	'Safe'	5	0	0	0
	Ownership	8	0	0	0
	At hand (materials)	4	1	0	1
	Quietness	6	0	1	1
	Focus	5	1	1	1
	Interaction (social)	0	10	11	3
	Regulating (obstacles)	5	8	5	4
	Regulating (strategy)	7	3	3	1
	Functionality	8	2	0	0

Table 2: Characteristics of the workplaces as learning spaces mentioned in relation to the 'moment of learning'

Both the obstacles and the necessity of a strategy were not described in any exact sense but through a feeling or problem that came up in the work situation. This feeling or problem occurred at the desk, as well as in the lecture or training environment, and was almost always connected with another person, while at home, the regulation of the obstacle or strategy usually concerned a technical or content-related learning aspect. However, a few times at home family matters also had to be regulated.

[3] One adult learning professional did not take a picture of a learning moment 'on the move' in this study. The category 'on the move' was actually (in the photographs) somewhat different from the definition of Felstead and Jewson (2012) and not so 'mobile' (travelling). It usually concerned other workplaces in the vicinity of the desk at work.

Topic	Characteristic (Code)	Home place	Desk at work	Lecture or training room	'On the move'[4]
Outcomes	Learning	9	4	+1 -3	1
	Well-being	9	+6 -3	+8 -2	5
	Functioning	4	+1 -2	4	0
	Trust in colleagues	0	1	1	4
	Social control	-2[5]	4	-2	-1

Table 3: Outcomes mentioned for the workplaces as learning spaces

Table 3 presents the outcome characteristics mentioned in relation to the photographed moments of learning. Almost every professional recognized learning and well-being at home. Home is experienced as 'pleasant', coded as well-being.

> "It is full of atmosphere and I am sensitive to it, that's why I like to sit here" (AB).
>
> "Yes, I like to do it once in a while, because it's more efficient and effective" (BA).
>
> "It is different. Here (desk picture) it's more in volume and here (home) it's more in depth" (JL).

Learning in the other workplaces is mentioned by significantly fewer participants. Nevertheless, well-being is mentioned in relation to photographs taken at the desk at work and in the lecture or training environment by almost all participants. However, in some instances these workplaces were said to negatively influence well-being. Functioning, trust in colleagues and social control as outcomes, differentiate between the workplaces as learning spaces. They were relatively less recognized by participants.

[4] One adult learning professional did not take a picture of a learning moment 'on the move' in this study. The category 'on the move' was actually (in the photographs) somewhat different from the definition of Felstead and Jewson (2012) and not so 'mobile' (travelling). It usually concerned other workplaces in the vicinity of the desk at work.

[5] This outcomes topic was only mentioned in a negative sense. Other topics were mentioned as positive or negative by different participants (see for example, well-being, 'desk at work').

Figure 2 below presents the scores of the participants on the interview questions on how engaged and autonomous they felt in the specific workplace (based on a photograph) on a scale from 1-10. Some participants made additional comments after answering these questions. In relation to home engagement:

> "This is my chair, my table, my materials" (IH).
>
> '"I can be my natural X" (BA).

In relation to autonomy at home:

> "I feel free and I can do and allow what I want" (RA).
>
> This differs significantly with engagement in relation to the desk at work: "…it isn't a personal place" (BR).

In relation to autonomy at the desk:

> "We were very restricted in how to use the furniture" (MD).

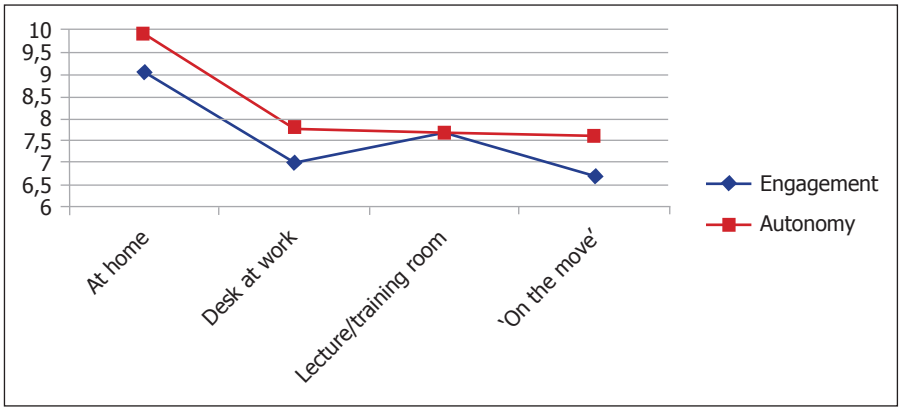


Figure 3: Engagement with and autonomy in each of the workplaces as learning spaces (8 missing values replaced by the mean)

This is more or less the same with regard to the two other workplaces. Engagement and autonomy both depend on the opportunities to use the lecture/training space and the 'on the move' place as freely as possible, in the sense of functionality and the direction of ownership:

"The space may be bigger, so you can do more dynamic things" (JL).

Or: "…. It concerns the learning space and the people. The people create the learning space in all cases" (IH).

Finally, in the interviews in relation to the workplaces, the participants were asked to describe the learning outcomes they saw. These responses were coded as cognitive, affective and meta-cognitive.

Topic	Characteristic (Code)	Home place	Desk at work	Lecture/ training room	'On the move'[6]
Learning outcomes	Cognitive	7	7	4	2
	Affective	1	2	7	7
	Meta-cognitive	4	2	0	2

Table 4: Learning outcomes of the workplaces as learning spaces

The majority of learning outcomes at home and at the desk at work were coded as 'cognitive', meaning that the participants mention that they do gain knowledge and learn theory in these workplaces.

"So I read and I reach a moment of: that could be the case …" (JB).

Or at the desk at work:

"And he gave me feedback on that and I learned from it" (NO).

"… I … have learned that the rules are like that and I accepted it in the situation" (JL).

[6] One adult learning professional did not take a picture of a learning moment 'on the move' in this study. The category 'on the move' was actually (in the photographs) somewhat different from the definition of Felstead and Jewson (2012) and not so 'mobile' (travelling). It usually concerned other workplaces in the vicinity of the desk at work.

In the lecture/training space and 'on the move', contrary learning outcomes, coded as 'affective' were in the majority. Through interaction with other people the participants mentioned a change in their attitude.

> "Whereas I think at this moment I should not do what they [do], I should not … it is something I interpret, so that I have learned" (NvdS).

> "That I should talk differently" (BR).

> "I learned that to pay attention to feelings, emotions and the pace of my voice can also be very important" (NO).

Finally, now and then meta-cognitive outcomes were mentioned, in particular in relation to the home.

> "I have learned, searched, found. How I could do that?" (NO).

> "What am I going to do, how should I do it?" (LO).

Modelling the learning of the group of professionals in the various workplaces

We built models of the learning moments for each of the recognized workplaces as learning spaces. The models are elaborated in a similar manner to the work of Kontiainen (2002). These models were not made for each individual participant but are an integrated summary of what all the respondents together showed us about each 'workplace as a learning space'. In fact, the four spaces revealed a sort of continuum which illustrates quite different learning opportunities in each space. Figure 4 shows the configuration of the home place as learning space.

Home as workplace

a) The workplace (material, sociability)

The material at home needed by the professional to work and learn with is mentioned as having a good quality (1a). The model shows that the material is at home related with the concepts ownership (3a), autonomy (4a), involvement (5a) and climate (7a). The material is also positively linked with the cognitive learning outcome (8a) and negatively linked with an affective learning outcome (9b). The not available sociability at home (2b) relates with the affective (9b) as well as meta-cognitive (10b) outcome.

b) The triggering workplace learning concepts (ownership, autonomy)

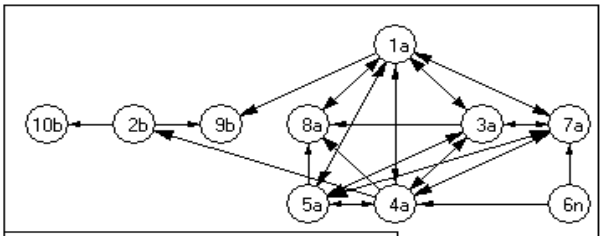
The ownership (3a) as well as the autonomy (4a) at home are high. Both concepts are related with material (1a), climate (7a) and involvement (5a) indicated by the cells. Finally the learning outcome is mainly cognitive (8a).

c) The experienced atmosphere (involvement, interaction, climate)

Although being at home there is some median interaction (with colleagues?). This concept is linked with a climate (7a) as well as with autonomy (4a). But this relation is not linear and there is not a connection between these both concepts. But climate (7a) is related with material at hand (1a), ownership (3a) and involvement (5a).

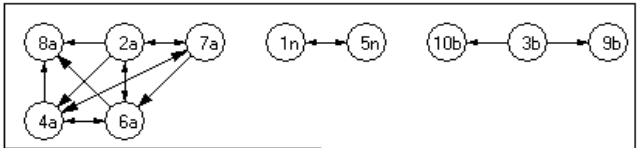
d) Experienced learning outcomes (cognitive, affective, meta-cognitive)

At home the sociability (2b) connects with the affective (9b) and meta-cognitive (10b) learning. outcomes. The ownership (3a), autonomy (4a) and involvement (5a) are the keys to the cognitive learning outcome (8a).



1a: Material good	<--	3a 4a 5a 7a 8a
2b: Sociability small	<--	4a
3a: Ownership high	<--	1a 4a 5a 7a
4a: Autonomy high	<--	1a 3a 5a 6n 7a
5a: Involvement high	<--	1a 3a 4a 7a
6n: Interaction medium	<--	
7a: Climate positive	<--	1a 3a 4a 5a 6n
8a: Cognitive high	<--	1a 3a 4a 5a
9b: Affective low	<--	1a 2b
10b: Meta-cognitive low	<--	2b

Figure 4: The workplace as learning space at home



1n: Material neutral	<--	5n
2a: Sociability large	<--	6a 7a
3b: Ownership small	<--	
4a: Autonomy high	<--	2a 6a 7a
5n: Involvement medium	<--	1n
6a: Interaction active	<--	2a 4a 7a
7a: Climate positive	<--	2a 4a
8a: Cognitive high	<--	2a 4a 6a
9b: Affective low	<--	3b
10b: Meta-cognitive low	<--	3b

Figure 5: The desk at work as learning space

Desk at work

a) The workplace (material, sociability)

The model shows that at the ordinary workplace the material is neutral (1n) and accordingly the involvement is medium (5n). The large sociability (2a) relates to high interaction (6a) and positive climate (7a).

b) The triggering workplace learning concepts (ownership, autonomy)

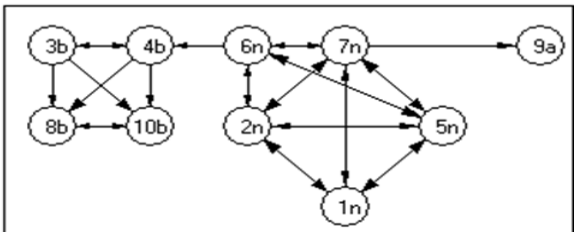
The ownership of this workplace is small (3b). Autonomy (4a) is large and due to sociability (2a), interaction (6a) and climate (7a).

c) The experienced atmosphere (involvement, interaction, climate)

At the ordinary workplace involvement (5n) is medium and only in one direction linked with material (1n). The professionals are in interaction (6a). There is a relation with autonomy (4a) and climate (7a). While the climate is due to sociability (2a) and autonomy (4a) at the work desk as well.

d) Experienced learning outcomes (cognitive, affective, meta-cognitive)

The cognitive (8a) learning outcome is related to sociability (2a), autonomy (4a) and interaction (6a). The low affective (9b) and meta-cognitive (10b) outcome is due to the small ownership (5n) of the desk at the workplace.



1n: Material neutral	<--	2n 5n 7n
2n: Sociability medium	<--	1n 5n 6n 7n
3b: Ownership small	<--	4b
4b: Autonomy low	<--	3b 6n
5n: Involvement medium	<--	1n 2n 6n 7n
6n: Interaction medium	<--	2n 5n 7n
7n: Climate neutral	<--	1n 2n 5n 6n
8b: Cognitive low	<--	3b 4b 10b
9a: Affective high	<--	7n
10b: Meta-cognitive low	<--	3b 4b 8b

Figure 6: The lecture/training place as learning space

The lecture/training place

a) The workplace (material, sociability)

The material and the sociability in the lecture or training place are neutral (1n) respectively medium (2n). The neutral material (1n) comes from the neutral sociability (2n), the medium involvement (5n) and the neutral climate (7n). While the neutral sociability (2a) is due to the same concepts and additionally to the neutral interaction (6n).

b) The triggering workplace learning concepts (ownership, autonomy)

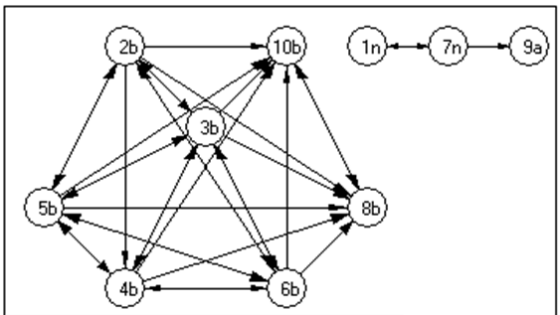
The ownership of this workplace is small (3b) and related with autonomy (4b). At the same time autonomy relates with ownership and also with neutral interaction (6n).

c) The experienced atmosphere (involvement, interaction, climate)

The three concepts within experienced atmosphere are interrelated (two-sided) with each other. In the primary process workplace of the adult learning professionals sociability (2n) influences in addition each of these concepts as well. Only involvement (5n) and climate (7n) are due to material (1n).

d) Experienced learning outcomes (cognitive, affective, meta-cognitive)

The low cognitive (8b) learning outcome is due to small ownership (3b), autonomy (4b) and low meta-cognitive (10b). The high affective (9a) to a neutral climate. And the low meta-cognitive (10b) outcome to the small ownership (3b), autonomy (4b) and cognitive (8b). Finally, cognitive and meta-cognitive learning outcomes are interrelated.



1n: Material neutral	<--	7n
2b: Sociability small	<--	3b 5b 6b
3b: Ownership small	<--	2b 4b 5b 6b
4b: Autonomy low	<--	2b 3b 5b 6b
5b: Involvement low	<--	2b 3b 4b 6b
6b: Interaction passive	<--	2b 3b 4b 5b
7n: Climate neutral	<--	1n
8b: Cognitive low	<--	2b 3b 4b 5b 6b 10b
9a: Affective high	<--	7n
10b: Meta-cognitive low	<--	2b 3b 4b 5b 6b 8b

Figure 7: The 'on the move' workplace as learning space

Workplace 'on the move'

The various 'on the move' workplaces show a relative simple configuration of concepts (figure 7.). The concepts of sociability (2b), ownership (3b), autonomy (4b), involvement (5b) and interaction (6b) are almost completely (see figure 7.) mutually interdependent. At the same time they show a relation with low cognitive (8b) and meta-cognitive (10b) learning outcomes. The latest are also interrelated (two-sided). Finally, an affective (9a) high outcome comes from a neutral climate (7n) which interrelates with neutral material (1n).

Conclusion and discussion

In this contribution we have attempted to describe and analyse various 'workplaces as learning spaces' of adult learning professionals. When does the daily work of these professionals come together with the process of learning? Can we understand the necessary informal learning and continuing development of adult learning professionals? And, finally, how, what and why do they experience 'learning' in different workplaces and is this learning related to their perception of the space in which the learning takes place (Kersh, Waite & Evans 2012)? Our analysis, using the participative photograph interview developed by Kolb (2008) as well as the Dynamic Concept Analysis model of Kontiainen (2002), shows that learning through work for adult learning professionals seems to be a relative peculiar thing. Even stronger: learning may be not 'a conscious acting as such' but happens to them now and then and they call it 'development' or 'growth'. So, informal learning may be something that has not a distinguished goal. Or it may not come from a personal urgency. Overall the adult learning professionals photographed four places in which they recognized that learning may be in some instance interdependent with work. These places are: at home, at a desk at work, in a lecture or training room and 'on the move' (different from the first three). In each of these places the adult learning professionals experience somewhat distinctive characteristics (concepts) as learning opportunities. At home ownership, autonomy, involvement, climate are positively involved with learning cognitively (most knowledge and sometimes skills). While learning for affective outcomes at the same time is low despite the good material and the additionally low sociability. At the work desk the cognitive outcome may be high through high sociability, interaction and autonomy. Here, the affective outcome is low because of low ownership. Next, the lecture annex training room show a complete different configuration. Here, there is the opportunity for high affective outcomes via a neutral climate which interrelates with also neutral material,

sociability, involvement and interaction. Moreover the low cognitive and meta-cognitive outcomes in the lecture/training room are interrelated with low ownership and autonomy. Finally, also in the 'on the move' places cognitive and meta-cognitive outcomes are low because all concepts are contributing negatively to this non-existing learning. The affective outcome is on the move low also through a neutral climate which then interrelates with neutral material.

It appears that now and then the adult learning professional develop reasonably unconscious in the context of the execution of actual labour at each of the four workplaces. They indicate and recognize cognitive outcomes of the learning at home and at the desk at work. Moreover in the lecture/training room and on the move affective outcomes are recognized. At home the development seems to be directed at the 'what' of learning or clearly explicit knowledge, while at the work desk the how of doing things may be the focus because interaction plays a role of importance. In the lecture/training room as well as 'on the move' informal learning considering an affective high outcome depends on the actual experienced climate only!

However, this seemingly informal learning and professional development of the adult learning professionals isn't very strongly and convincingly recognized by our participants. They admitted that taking the photographs at moments of learning wasn't simple and moreover each of the recognized learning outcomes mentioned in the prior paragraph (in the four workplaces) was mentioned by 7 out of 11 participants. In this research, the workplace learning of adult learning professionals was treated as a holistic phenomenon. The learning does not take place simply 'informally', as an alternative to all the learning that does take place in formal and non-formal conditions. The personal and professional learning of adults throughout the course of their life is actually a quest for opportunities and moments that have an existential significance, are seemingly necessary and, in essence, free from compulsion, as well as safe in the sense of allowing one to be or become the person one means or wants to be. Accordingly, as has been shown the four different workplaces have different characteristic that restrict or expand the opportunity for such learning.

The implications of these findings are quite significant theoretically as well as practically. Many theoreticians indicate that informal learning is a welcome aspect of work-related learning. However, is it important for the learners themselves, when it is nothing more than unconscious adaptation? Personal development within workplaces as learning spaces seems to demand an awareness and an element of personal choice for a process of real transformation to begin, sometimes this is due to the context but it always concerns the well-being and health of the adult learning professional. With respect to the context, it may even mean that the contract with the context ends.

The participative photograph interview offers a tool for approaching experienced learning opportunities of adult professionals that otherwise would not become a topic of research. Nevertheless the subjects of the study expressed their difficulties with catching the learning moments. Learning, particular informal is a phenomenon that does not show itself. So subjects and researchers have to admit the difficulties they had with the interpretation of the pictures respectively the accompanying hermeneutic interview transcriptions.

There is a striking difference between the outcomes of the introductory and general part of the interview and the following photograph part of the interview. In the general part of the interview the adult learning professionals give the impression that they may learn constantly, in each and every situation and that they learn a lot. However, this optimistic vision doesn't show up in the photographs interview part. This difference may illustrate that 'being a learning person' is considered to be a good thing and socially desirable. These subjective thoughts about learning doesn't show up that much in the photographs at all. Again, in the general part of the interviews the participants have also been clear on the why they learn. They learn constantly because they think 1. they do, 2. they have changed, 3 it's been urgent to do so, 4. they learn from significant others, 5. they develop, 6. they reflect etc. Learning seems to be interpretation (Foucault, 1977). Learning is not experienced by the participants as such. Like that, the meta-cognitive learning outcome has not been mentioned to often with respect to the photographs, the participants don't mention that thinking through topics may be an important aspect of their learning. Learning they think just happens. This is quite odd, in particular because the participants are adult learning professionals. Working with adult learners they should have experienced the complexity and ambiguity of learning. They didn't. To us this is the most astonishing outcome of our research.

Finally, this mixed-design research is explorative in nature and therefore generalization of the results is not possible. Further limitations of the study are the low number of participants and the selection of them as well. Nevertheless, the paper provides one example and a demonstration of how the DCA method could be used to analyze learning processes in different workplace settings. The graphical presentations provide a visible illustration of how, what, and why learning and development may take place in these various settings. The photographs served as input in this respect. The photographs on their own hardly 'show' what the participants lay in to it through the interviews.

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APPENDIX I Statements of Relationship between Concepts of Adult learning

- in brackets are the variables which are considered not to have a linear relation to the concept or attribute in question
* indicates a trend towards a relation as stated

1. Material
1/2 The higher the sociability, the more use of material
1/3 The greater the ownership, the more of material
1/4 The higher the autonomy, the more use of material
1/5 The more the involvement, the more use of material
1/6- (Interaction)
1/7 The more positive the situation, the more use of material
1/8 The more cognitive outcome, the more use of material
1/9- (Affective outcome)
1/10- (Meta-cognitive outcome)

2. Sociability
2/1 The more use of material, the higher the sociability
2/3 The greater the ownership, the higher the sociability
2/4 The higher the autonomy, the higher the sociability
2/5 The more the involvement, the higher the sociability
2/6 The more active the interaction, the higher the sociability
2/7 The more positive the situation, the higher the sociability
2/8- (Cognitive outcome)
2/9- (Affective outcome)
2/10- (Meta-cognitive outcome)

3. Ownership
3/1 The more use of material, the greater the ownership
3/2 The higher the sociability, the greater the ownership
3/4 The higher the autonomy, the greater the ownership
3/5 The more the involvement, the greater the ownership
3/6 The more active the interaction, the greater the ownership
3/7* The more positive the situation, the greater the ownership
3/8- (Cognitive outcome)
3/9- (Affective outcome)
3/10- (Meta-cognitive outcome)

4. Autonomy
4/1 The more use of material, the higher the autonomy
4/2 The higher the sociability, the higher the autonomy
4/3 The greater the ownership, the higher the autonomy
4/5 The more the involvement, the higher the autonomy
4/6* The more active the interaction, the higher the autonomy
4/7 The more positive the situation, the higher the autonomy
4/8- (Cognitive outcome)
4/9- (Affective outcome)
4/10- (Meta-cognitive outcome)

5. Involvement
5/1 The more use of material, the more the involvement
5/ The higher the sociability, the more the involvement
5/3 The greater the ownership, the more the involvement
5/4* The higher the autonomy, the more the involvement
5/6 The more active the interaction, the more the involvement
5/7 The more positive the situation, the more the involvement
5/8- (Cognitive outcome)
5/9- (Affective outcome)
5/10- (Meta-cognitive outcome)

6. Interaction
6/1 (Material)
6/2 The higher the sociability, the more active the interaction
6/3 The greater the ownership, the more active the interaction
6/4 The higher the autonomy, the more active the interaction
6/5 The more the involvement, the more active the interaction
6/7- A non-linear relationship with climate
6/8- (Cognitive outcome)
6/9 The higher the affective outcome, the more active the interaction
6/10- (Meta-cognitive outcome)

7. Climate
7/1 The more use of material, the more positive the situation
7/2 The higher the sociability, the more positive the situation
7/3* The greater the ownership, the more positive the situation
7/4 The higher the autonomy, the more positive the situation
7/5 The more the involvement, the more positive the situation
7/6- A non-linear relationship/Interaction

7/8- (Cognitive outcome)
7/9- (Affective outcome)
7/10- (Meta-cognitive outcome)

8. Cognitive
8/1 The more use of material, the higher the cognitive outcome
8/2- A nonlinear relationship/ Sociability,
8/3 The greater the ownership, the higher the cognitive outcome
8/4 The higher the autonomy, the higher the cognitive outcome
8/5 The more the involvement, the higher the cognitive outcome
8/6 The more active the interaction, the higher the cognitive outcome
8/7- A non-linear relationship/ Climate
8/9- (Affective outcome)
8/10 The higher the meta-cognitive outcome, the higher the cognitive outcome

9. Affective
9/1 The lower use of material, the more affective outcome
9/2 The higher the sociability, the more affective outcome
9/3 The greater the ownership, the more affective outcome
9/4 The higher the autonomy, the more affective outcome
9/5 The more the involvement, the more affective outcome
9/6 The more active the interaction, the more affective outcome
9/7- A non-linear relationship/Climate
9/8- (Cognitive outcome)
9/10- (Meta-cognitive outcome)

10. Meta-cognitive
10/1- (Material)
10/2- A non-linear relationship/Sociability
10/3 The greater the ownership, the higher the meta-cognitive outcome,
10/4 The higher the autonomy, the higher the meta-cognitive outcome,
10/5 The more the involvement, the higher the meta-cognitive outcome,
10/6 The more active the interaction, the higher the meta-cognitive outcome,
10/7- A non-linear relationship/Climate
10/8 The higher cognitive outcome, the higher the meta-cognitive outcome,
10/9- (Affective)

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The *art* of workplace learning

Padma Ramsamy-Prat

The research develops the cases of two young professionals working at the communication department at the Conservatoire National des Arts et Metiers, Cnam in Paris. The focus is placed on their learning practices at work and description of their subjective experiences. Although the results show some similarities in the learning process, there are nevertheless other characteristics that appear behind the scene. Indeed, their actions tend to show individuals performing an art where strategies and tactics (de Certeau, 1990) are carried out. Moreover, the need to learn about the job conveys a positive image of the individuals who appear pleasant and helpful. Besides, space used for learning becomes a space for creativity, intelligence and art.

Keywords: workplace learning, art, strategies, interpersonal communication

The *art* of workplace learning

This article presents two cases at the Conservatoire National des Arts et Metiers, Cnam University in Paris. Two young professionals working at the communication department agreed to take pictures of their learning practices at work and comment them later at their convenience. My interest in practice-based learning relies on real situations which enable to examine similarities, differences and challenges in the learning process. These situations develop understanding on how learning processes participate in the activity of workers. In the present situation, learning follows a requirement because new tasks appear at work. The practice encourages new ways of doing things in daily routines. The two individuals are junior communication specialists and they need to know about researchers and their research activities in order to inform the other institutions in the university. They claim to have a lot to learn in order to perform their task. Communicating about research is essential as it aims at informing the staff and the general public about the activities of the

institution. Sharing with the general public represents a means of attracting private institutions and companies for future research projects and funding. Therefore, the difficulty of the task is to promote research using communication skills and techniques to describe research activities in simple, common language. In this paper, I examine what I am calling the art of workplace learning and how it is embedded in strategies used by practitioners. At the same time, the learning processes convey a positive cooperative professional image in producing professional knowledge.

The research investigates on their learning process. How do they learn at work? Are there self-regulated learning involved? What gestures are displayed in the learning process? The first article introduces theories of learning, and focuses on workplace learning. I will then present the methodology and the findings along with the limitations of the study.

Formal vs informal learning

Formal learning starts at school where we qualify for a certain profession. In most schools and universities, specialization is offered before entering the labour market in an attempt to be operational immediately. In these cases, learning is acknowledged; it is formal and intentional. In the company, formal learning takes place when staff training is offered as a human resource policy of development. Contrary to what Littlejohn & al. (2016) suggest, in France training is well accepted and considered effective.

Learning at work can be explicitly informal learning because being on the workplace means carrying out different tasks. Informal learning depends on the individual, mainly his interest, motivation and self-satisfaction. Those characteristics may influence self-regulation and organization of learning depending on time allotted to other activities. Other characteristics must be taken into account, the self-engagement towards the job and the company, or even the goals set for a future job inside or outside the company. Consequently, the worker invests his time and energy to cover his intentions, mostly through deutero (self) learning. Deutero learning is developed by action science (Argyris & al. 1987) and contributes to lifelong learning. He may even acquire some competencies in the learning process, which can be suitable for other actions. For instance, knowing how to proceed when in need of writing a memo is beneficial, not only to the worker, but also to the team, or the division. Besides, the worker can share with a colleague, allowing both parties to learn.

Therefore, it may account for the fact that if learning is organized in an intentional manner, it may not be entirely informal. Learning is considered as an

expected activity. However, learning how to do things contributes greatly to the organisation. In many ways, learning at work is specific.

Learning at work is specific

Learning at work has a strong historical past. In craftsmanship, workers have always started the learning on the workplace where the senior worker known as a professional, would act as a mentor to the junior. The French have developed the "Compagnonnage" but it has existed in various forms all over the world and has proved to be very successful. The modern version is called apprenticeship and is offered in most professions. Organized mentorship is commonplace in many companies. Team learning can be initiated as well. I investigated on an original form of team learning on the clients' premises in software companies where the client's project allows a junior to learn while doing. Unexpectedly, the junior was not the only learner as the clients benefited also from the experiment (Ramsamy-Prat, 2014).

Competition and poor labour market have influenced the way we learn. We put forward other knowledge that is required by organizations in order to remain employable. What makes the difference between two qualified candidates are behavioural abilities and adaptability to change (Baraille, 2010: 7). Indeed, behavioural abilities offer the guarantee to work efficiently with others whereas adaptability provides the necessary flexibility. Behavioural competencies are a means of covering uncertainty and dysfunctions in organizations (Baraille, 2010).

The reasons why learning at work is specific are numerous. The first one stems from the everyday tasks required (Littlejohn & al. 2016) and interactions with others (Mayen, 2002). Asking information or confirmation from a colleague represents the casual everyday on-site learning and is largely admitted in many professions. Also, the authors put forward that professional learning is intertwined with the job itself, and prioritizing becomes part of self-regulating knowledge (Billet, 2004). The latter argues that, in addition, the resources provided by the work situation takes part in the learning (Billet, 2010: 4). Nonetheless, if it turns out that learning and working are embedded, the possibility to distinguish one activity from the other may represent a challenge (Argyris & Schön, 1992).

Developing creativity in space

In the learning process, the environment offers ground for creativity. The need to learn in order to perform a task requires competencies in communication skills for two reasons. First, information is obtained through communication with others. The second reason relies on the ability to create and maintain good relationships with others, which I call relational knowledge (Ramsamy-Prat, 2015). For example, when in need to learn about the job, individuals drive to convey a positive image and appear pleasant and helpful. Therefore, space used for learning becomes a space for creativity, intelligence and art. In vocational training, space can be a key factor; it is designed as part of the training programme (Agamben, 2007). Training professionals use financial and creative means- colours, music, and furniture- to make it more attractive, far from tensions and daily work space. Bourgeois and Nizet (1999) claim training space is protected, which encourage individuals to engage in the learning process. I would add that space is manipulated at will. This accounts for the fact that working space is used as learning space. Besides, creativity tends to shadow the learning and brightens behind the scene as a performance (Goffman, 1973). Indeed, professionals' actions tend to show individuals performing an art where strategies and tactics (de Certeau, 1990) are carried out.

Strategies and tactics

The « Practice of Everyday Life » express how the individual referred as the *consumer* applies creativity so as to benefit from them. The author shows how we design daily activities applying procedures with "schemes of operation and technical manipulations" (de Certeau, 1990: 71). He differentiates two major techniques used as an art of doing: strategies and tactics. Strategies appear inside organizational power structures, whereas tactics are set up by subjects who are subjugated. Strategies are deployed against external relations to reach official or proper ends whereas tactics show defensive and opportunistic means. The latter is used in limited ways but seizes the moment. If strategies rely on a proper environment, tactics make an environment which they can penetrate (de Certeau, 1990: 59). This form of intelligence of the moment has been called cunning intelligence in the study of Greek *mêtis* which was deployed in times of wars (Detienne & Vernant, 1974). The workplace becomes a privileged place of observation for the researcher who can perceive an art of doing, knowledge and skills.
Strategies and tactics put forward an art of doing but also an art of saying.

Learning and gestures

The body expresses gestures. In interactions, they are addressed to the other, and are seen, heard and perceived. They accompany discourse, and they expose themselves in gestured discourse that carries a complementary communicative function. They are referred to as embodied interactions. Let's consider verbal gestures and non-verbal ones.

Non-verbal gestures

Non-verbal gestures carry a co verbal function because they encourage better understanding of speech. In this study, the two communication professionals use speech, eye, hand and pointing gestures aiming at questioning and understanding their peers and the researchers of the institution. These gestures offer a plural language "as a mediation between thought and speech" argues Calbris (2003). It reminds a co text which provides what Alin (2010) refers to as a symbolic enunciation. Symbolic enunciation accounts for the meaning which is at stake in professional practice. The author adds other gestures express technical enunciations that aim at explaining their objectives. In the study, reading, inquiring and writing being at the heart of the practice represent trade gestures (Jorro, 2006, 2016). As for professional gestures, they tend to shoot in a rigorous manner, at a precise time and are subjective. While making the distinction between trade and professional gestures, the author claims that gestures exhibit knowledge and knowledge in action. When describing gestures in everyday life, Mauss (1950:117) considers the correspondence between the specific gesture and the result of activity. He also underlines that out of the need to express, the body is considered as a tool, a tool-object that individuals displace at their convenience.

Speech gestures

Gestures using discursive activity attempt to convey a message addressed to the other. The gesture operates on interpersonal communication which is interactive and relies on physical presence (Cros; Meyer, 2014). Although speech gestures are often embedded with other body gestures, it brings clarification and active communication and allows the other person to respond. In interactions, speech gestures offer the possibility to repeat, clarify, argue, convince or deny. Speech gestures enable conversations and these conversations can be analysed (Kerbrat-Orecchioni, 2005)

for further understanding. When added to other body gestures, speech is one but essential clue of meaning in interactions. In learning acts, body gestures are often adjusted to speech, thus presenting multi modal communication (Filliettaz, Bronckart, 2005; Mondada 2005, 2016). The speech is coded and purposeful.

In the following data, I will show how gestures and particularly enunciation is analysed. Beforehand, I will explain the method carried out.

Method

A qualitative method was designed for the inquiry. I met four persons from the research division of the Cnam, two of them accepted to be part of the study. In this experience, the methodology relied on photographs taken by the protagonists themselves. The pictures added to the study for two reasons. First, they helped to recall the activity after action because professionals tend to forget how they perform tasks. Second, it contributed to better interviewing; I used them to focus on the actual activity. Further agreement was to comment on them; I opted for a qualitative method of inquiry designed by Vermersch (1994, 2011). Micro phenomenological interviewing is a method interested in the experience of actions. The psychologist develops the concept of experiential fulfilment to drive the subject to his/her experience at that moment since the situation is decontextualized. The information provided by the interviewee creates awareness and offers access to implicit and subjective experience. It allows identifying some data concerning decision-making and strategies developed by the subject in the present activity. It constitutes a facilitating tool to access verbalization. The pictures enabled to bring back verbalization to the actual situation and avoid what Vermersch calls satellite information. In micro phenomenological interviewing, the researcher's guidance is an essential part of the tool. Consequently, my voice was soft, I adopted a low tone, paused very often to help focus on a precise action.

An individual meeting at their office was facilitated to explain the methodology and request some pictures of their learning situations at work. Talking about learning at work arises many questions; people tend to think they *work* in the workplace and make a clear distinction between spaces: learning is at school, working in the office. Consequently, I did not provide any explanations about learning situations or precisions as an attempt to avoid influencing the practitioners. I believe that the choice of learning situations to be personal as they represent crucial elements of genuine interaction and construction of meaning for the subject.

This method allowed flexibility in timing because it has become difficult to obtain the participation of busy workers who claim they cannot make time for experiments. In addition, the experiment enables the worker to think of himself as a

learner in certain situations. This element creates awareness on the learning process itself, but also on times when performing a task requires the need to learn. Therefore, it takes the worker some reflection on what learning is and when learning is necessary to challenge the required task.

Pictures framed

Phase1. A 30-minute meeting was arranged with four workers, at the office to explain the study and obtain their participation. Two of them volunteered. We agreed on a month period to take the photos and email them. I name the interviewees Danielle (woman) and Joe (man). Both in their early thirties, they confide this is their second job after their studies. Danielle made sure each picture she sent came with an explanation. Joe waited for our interview to express about them. They both sent four pictures. I collected three pictures and one selfie for Danielle; four pictures for Joe.

Phase2. We adopted email communication to plan an individual interview at their office. We agreed to inquire about their choices and obtain explanations for an hour. Micro-phenomenological interviewing (Vermersh, 1994, 2011) allows the researcher to keep a backward and non-influential position. The pictures were used as a support to contextualization and helped in viewing the practitioner in action. The interview transcripts are put into English and analysed. Semiotic analysis (Filliettaz, Bronckart 2005; Kerbrat-Orecchioni, 2005; Mondada 2005, 2016) is performed in numerous rounds in an attempt to make analogies and differentiations between the two cases.

Phase3. The interview took place at the office. In both cases, someone popped in and we were disturbed. But learning and an art of learning was noticeable. Although the interview was expected, this event was not. Actually, because of the activity, unexpected ethnographic observation took place following an actual dual intertwined situation: the interview and the work. Both workers took the time to answer a colleague enquiring about work. In itself, this situation represents a learning case which can be stated as: how to stop work, answer a co-worker and get back to work. In other words, learn to accept being disturbed, and perhaps either waste some time in the process or distribute time differently. I was then able to observe an everyday practice and the ways of operating of both professionals.

Two interviewees

Danielle and Joe are both in charge of communication. Joe lists all research projects, describes them, give all details for application. He emails the projects to all the institutions, the head of laboratories and doctoral students. A scientific classification offers a quick view of all projects and their duration. He provides verbal and numerical information about all projects, and assists in administrative applications. Danielle reads and investigates about research, sums up the projects and rewrites for the staff and the general public in a magazine called the Cnam Mag, she works also on external communication.

The following section describes the results of the study and offers grounds for discussion.

Results and discussion

> "So, I learn by myself, and then I learn with others…for the Website, I worked a lot with a colleague…" (Danielle)
>
> "then…by myself…we learn from one another…" (Joe)

Four main gestures stem from the experiment: reading, inquiring, participating and performing. For example, reading: I learn by myself and inquiring: then I learn with others. Learning about new research projects seems compulsory. Not only are they new to the job, but both must understand new projects in various scientific fields in order to communicate about them. Participating in presentations add to their understanding, sometimes a direct contact with the researcher allows a few clarifying questions. Performing follows the line of trial and error, which enables corrective actions during the process.

Learning examples

Deutero learning

Deutero learning (Argyris & al. 1987) is said to contribute to lifelong learning. Both Joe and Danielle learned from a previous job and are applying the previous learnings in their current job. The data provides some material on behaviour at work. In her previous job, Danielle worked in a publishing company and had to read and write

about authors and their stories. According to her, at the Cnam, mentioning figures is essential. Joe specialises in computing and worked in a software company before Cnam.

> "Already, I must talk figures, at Cnam it's 80.000 auditors, research means 260 doctoral students… I've learned to shut my mouth and accept sometimes to get an earful…" (Danielle).

> "I've learned different things…I've learned to work better and also fast because of deadlines…" (Joe)

Both share their knowledge transfer about reading documents and putting data on line. Moreover, they adopt a step by step approach in inquiring and writing activities:

> "First, I write different paragraphs, I make a draft, and then I put the paragraphs together, after I read" (Danielle)

> "I call or email the researcher, I take notes, then I put things in order, I design before putting on line" (Joe)

This step by step process corresponds to lifelong learning as they both apply the process when performing the writing activity.

A duet

> "No, you can't do that…it won't work…have you tried…. Then you must use URL…" (Joe)

This is what I overheard during the interview with Joe, a colleague knocked, greeted me and shared about a problem to access a piece of information he needs. This example provides the understanding on how interaction is essential in learning, it enables to readily solve problems and gain time. Learning situations in interaction with others is clearly announced by Danielle:

> "… I work a lot with Stephanie M…who is in charge of communication…I learn from her…" (Danielle)

It raises another question though, did the colleague ask Joe because he assumed Joe knew the answer, or does Joe carry the image of the helpful person. In other words is Joe considered competent or helpful? What follows entitles to think there may be a little of both.

Reflection and transferability

This activity offers grounds for self-regulated learning. Reflection on action allows leaning on trial and error processes to carry out a task. In interaction, one could argue that each practitioner plays the role of the trainer for each other. This improvised trainer is available and handy, co-construction of solutions lead to problem-solving.

The pictures helped to focus on the activity being carried out. With this support, retrospection of actions can be observed. Calbris (2003) points out that if gestures pave the way to speech, it means it is the expression of a pre conceptualized scheme. As for Vermersch (1994, 2011) when viewing a film, the focus is placed on actions being carried out. An individual cannot correct the testimony of the subjective experience because it is impossible to claim it has not been or describe the subjective experience. The subject only can claim accessing his experience and formulate it to others.

Danielle learned to organize "My thesis in 30 seconds" event while doing with her counterpart. Similarly, for digital communication a form of supervision was set up until she feels autonomous. The assumption is that she will add knowledge from what she was taught.

> "…here I am in digital communication, I worked a lot with a colleague, but now, through repetition, I do more and more by myself…"

The added knowledge stands as background knowledge she acquired in her previous position. Background competencies reinforce learning processes and give way to new ways of problem-setting and problem-solving. Both interviewees stated in different ways how they apply the competence of transferability to learn to perform in a new job.

> "…I studied at university …this is a great help in learning" (Danielle)

> "…I already knew how to do this…I apply it here…" (Joe)

Characteristics for learning

Self-interest and curiosity

> "With this person, I listen, with others I just hear…Voila." (Danielle)

In learning, interest and motivation are acknowledged factors. The learning motive is put forward to render the positive image of the speaker. This situation shows some similarity to what happens in class: some students work/understand better with some teachers/trainers. The reasons do not always appear clearly. Both Joe and Danielle put forward their curiosity in the learning process; they both have to inquire and inform about the research projects in all fields. They claim their curiosity and self-interest help them in this task. Regarding semiotic analysis *voilà* ends a sentence (Filliettaz, Bronckart 2005; Kerbrat-Orecchioni, 2005). Danielle states the difference between listening and hearing. The ending accounts for the explanation, there's only one: it is relevant to this person. Had it been another person, she would have been hearing: *Voilà*. The affective motive is put forward; they both are the same age and share the same experience at work. They belong to the same community as I will explain later.

Time

One could argue that when this formal learning is planned, then time no longer becomes a challenge. The fact that learning and doing, and learning while doing seems so difficult to separate are also that professionals cannot admit they spend time on the learning. Besides, once the work is performed, they do not take or have the time to reflect on the learning. This aspect limits learning since many tasks await the worker at his desk. When Danielle realised she was spending too much time on writing the articles for the Cnam Mag research magazine, she convinced her boss to sign up in a writing class. The calculations she made about time represented the arguments she produced in the interpersonal communication with her boss (Cros, Meyer, 2014). She expected the class to be effective.

> "…2 hours for writing an article instead of 3…10 minutes to read instead of 60…" (Danielle)

Moreover, learning benefits other actions when the learner applies the same learning style or method:

> "…now the lesson I learn when I read an article on a topic I don't know…I do the same…" (Joe)

Creativity

Although the learning described look ordinary, the results show that the creativity of ordinary people in everyday life glitters. As stated previously, a colleague popped in during the interview. In Danielle's case, a woman stepped in to ask about a file. In Joe's office, a man questioned about a case by the door. I will attempt to analyse each act step by step. According to Alin (2010), an act presents four characteristics: it is enacted by an individual and is addressed, designs what has been performed, remains, leaves its mark and contributes to transform the social world.

The act is carried out in a performance where the backstage character appears on stage, in the light of the other protagonists and claim audience. What makes me think of performance as Goffman (1973, 1974) would describe is the presence of the researcher. I become the witness and audience of the unexpected. Referring to Mauss (1950: 117), I try to consider the correspondence between the specific gesture and the result of activity. During the interaction with the newcomer, the silent and subtle tricks- looking, smiling, using a soft voice- performed appeared efficient (de Certeau, 1990). The protagonists rely on those tricks to obtain the information they need to carry on with work. The soft voice is performed by the smiling woman:

> "Do you mind if…"

The subtle proper manner and asking permission are not genuine. The colleague does not allow time for the answer, and asks the question nonetheless. The protagonist relies on tricks covered with a smile and soft voice to obtain the necessary information. I could argue that this could have waited, but maybe Danielle's positive image is at stake. If a colleague needs help, she must act professionally, particularly when there is an audience, here the researcher.

> "Sorry to interrupt, but …"

This sentence is addressed to both of us. Politeness covers the act of interrupting my interview with Joe; the gentleman greets me and addresses his colleague. Goffman (1973, 1974) refers to rituals individuals perform in everyday life which is part of living and using codes in society. Joe's positive image appears important as he

detains some information or knowledge that he will pass to someone else. Then, he seems competent, but also helpful. His act may stand for a tactic as expressed below.

Greek metis

During both interviews, a colleague disturbed us. I focus on the art of learning in reference to Mauss (1950: 117) who points out the specific gesture and the result of activity. In addition, considering Greek *metis* which is practical intelligence (Detienne, Vernant, 1974) or tactic (de Certeau, 1990), anticipation about a future need is at stake. In workplace learning, strategies and tactics represent a significant part of the learning and can be a resource for lifelong learning

> "…for My thesis in 180 seconds…I had to work with Stephanie M, who is in charge of Communication at the ComUE[7]. Anyway, the event was organized within ComUE…then I had to work with her…And, it appears that I got along well with her, so we talked a lot about our job…I need to learn, so I am more interested… With this person, I listen, with others I just hear…Voila."

When the ordinary hero (de Certeau, 1990) moves the learning space with him, he needs are appropriation of the other's text. The art of performing combines the art of speech and learning. The latter could represent useful gestures in lifelong learning; they are adjusting gestures (Jorro & al, 2016). The listening gesture represents an adjusting gesture for it is adaptable to the situation the strategy the practitioner relies on is to talk and show interest:

> "I need to learn, so I am more interested…"

A space invented

Moreover, the practical intelligence proves even more useful when the space changes. Danielle has to work with Stephanie M., and meeting are arranged at the latter's office, or on the spot of the event "My thesis in 30 seconds". In both cases, the space is a new. The change of space appear as a benefit to the learning. The space, itself, participates to the learning and contributes to the learning. The space stands for a space of activity (Barbier; Galatanu, 2004). The subjects create the

[7] ComUE : in France, Community of Universities

space for the learning activity. When Danielle goes to Stephanie's office for work, she uses the space to learn about how to organize the event. Similarly, when preparing "My thesis in 30 seconds" event, she takes the opportunity to learn about the research projects the doctoral students are working on. The same applies to Joe, when inquiring about the research grants, he learns about them from the specialist in order to answer some general questions when required.

> "…the learning, it's because I am in contact with the doctoral students…" (Danielle)

> "…it's N.L. who works in bio-computing on Quid6…I asked and I learned about it" (Joe)

Positive image and professional identity

It is acknowledged that when questioned on their jobs, professionals tend to show a positive image. Speech gestures create scenarios to promote professional identity. Referring to situated learning developed in 1990s by Lave and Wenger, I observe contextual learning is used to promote identity and create meaning. For example, the learners appear motivated when expressing about document reading. In formal and informal encounters, gestures rely on strategies to demonstrate expertise as an attempt to promote professional image. The team collects knowledge as the beginner becomes active and immersed in the social community. The learner depends on the relationship to change role, he moves on as he connects the learning to identity expression. He becomes mature and collaborates when sharing the purposeful information linked to his identity.
Semiotic analysis ((Filliettaz, Bronckart 2005; Mondada 2005, 2016) shows how boosting positive image cover dynamism, motivation, work load or professionalism. The utterance regarding those items aim at restoring a misrepresentation: people also work hard at university and are dynamic even if they are civil servants (a life-position). Speech gesture reinforces the strategy deployed by the protagonist. Conversation analysis (Kerbrat-Orecchioni, 2005) shows calculated wording and high intonations. The following enunciations illustrate:

- Dynamism, motivation and work load:

> "I need to learn, so I am motivated (Danielle)

People here leave the office at 5, I sometimes stay much longer…I prefer to finish the task" (Joe)

Both interviewees claim they do not want a classic office job; they work as people do in the private sector, thus underlining motivation and professionalism. A professional thinks that work needs to be done and respects deadlines.

- Intelligence:

"I know what virtual screening is" (Joe)

"I can also speak about an emergency case at SNCF (the French railways) or explain migratory flow in Kesovo" (Danielle)

The verbs know/speak/explain may sound doubtful, but carry the intention of showing intelligence and willingness to learn.

- Competency:

Danielle commented each photograph sent:

"When I agree on something, I do it right…I am a perfectionist…When you claim you're a communication pro, you don't throw a picture just like that…"

The example serves as an illustration to express competency. The dynamic tone accompanies the adjective perfectionist. Each sentence carries the claimed competency: do it right, perfectionist, pro. The anaphoric form represents the strategy and the researcher can hear.

- Ambition

"The best website is the CNRS (French national scientific centre)…it's perfect…" (Danielle)

Does she aim at a similar result? Later, she admits taking inspiration from the CNRS website.

- Professional advice

  "It would be a mistake not to carry out next year…" (Danielle)

  "Other scientists obtain grants I don't see why not in humanities" (Joe)

  The verbatim show how in situated learning, the learner becomes an expert and takes advantage to share his knowledge with his peers.

The verbatim show how in situated learning, the learner becomes an expert and takes advantage to share his knowledge with his peers.

Community and learning

What Danielle enounced about her counterpart is striking:

> "…it turns out we get along well, so we talked a lot about work…we have the same profile, approximately the same age…so she becomes a girlfriend…a professional relation, but in an amicable way…" (Danielle)

The age factor creates identification of the same needs and same language. A form of bond between the two women in the same jobs has contributed to a sense of belonging to the same community. Besides, the subjective experience might be fake or incomplete; the second part of the sentence was not readily stated. The guidance leads to explore her experience not in describing it but towards its goals (Vermersch, 1994, 2011): so she becomes a girlfriend.
I can argue that in Joe's case, there may be the idea of only helping out a "friend" but I will discuss another option later. Let's underline the fact that the new generation has started to co-work more readily. In a previous study on pharmacists, the younger practitioners showed a strong desire to work with other medical professionals whereas senior pharmacists displayed some resistance (Ramsamy-Prat, 2015).

Professional identity in action

When the interview was interrupted, another striking event took place. Joe answered his colleague, but soon after dashed to the door and talked to him. The intonation was very audible: it was high enough to be heard by everyone. It was clear he forgot to deliver a piece of information, but was close enough (I could hear the colleague

muttering). This performance reminds the need of learning to be acknowledged and valued by both the environment and management. I noticed later that the middle manager's office was close, so were his colleagues, on the same floor. As a result, because of the visible activity, the helping act appears also as a profitable tactic: the boss witnesses the act. Joe "performs" his professional identity while assisting the colleague because this action can be valued.

As for the argument about time for learning, a learning limit may be calculated if the benefits are not valued. Danielle comments on the "My thesis in 30 seconds" with some pride:

> "…it was a real success, yes. No, well really it was a success (smiles then laughs)… Well, we had positive feedback…from all the personnel… Well, so this year, we'll do this again…this time it's a pleasure…it's stimulating."

Later during the interview,

> "…I worked a lot with my colleague, and then, through repetition…I can do things by myself…"

Conclusion and discussion

This research analysed practised-based learning of two individuals in the communication department at university. It focused on how people think and say they learn through subjective experience. Both individuals reported good self-regulated learning as a dynamic that would contribute to lifelong learning. Moreover, they put forward the high interest in their job that adds to the dynamic and interest in learning. They pay attention to "getting the job done in a good way" to demonstrate their professional identity. Semiotic analysis and observation of the unexpected interruptions complete their subjective experience where strategies and tactics imply professionalism. The need for recognition action appears clearly in the unexpected interaction with a colleague.

I would like to point out that if there is a strategy behind the learning, therefore intentionality is calculated, so it's not informal, it is organized learning. What appears creative though is the space that the learner carries with him and uses at will. According to theorists, self-regulated learning at work relies on motivation, cognitive and metacognitive processes and how they interact during learning. As for researchers, the motivation to learn remains a stable factor. One could add the opportunity that is seized, in other words, the tactic behind learning.

Besides strategies, tactics and community, one may consider the position of the learners. Being juniors, it may appear that there is no alternative but to learn with and from others. Their junior position does not provide the authority to postpone or refuse sharing information with other colleagues. In other words, the acceptance of learning comes with the willingness to keep the job. In most organizations, cooperation at work is required.

In relational knowledge, I underline the anthropological question related to giving and giving back (Ramsamy-Prat, 2015) and it was not studied in the two cases. Self-interest and motivation drive to paying attention and giving but the agents learn to reciprocate which enable to pursue the relationship. A big part of the motivation in learning concerns professional identity. Indeed, learning and progressing augments the identity of the person. This cannot be fulfilled if there is no recognition from management. A tension may be observed between personal implication in learning and the need for recognition. It may account for the strategy using performance in an attempt to become visible to the audience.

It would be worth investigating on how the two individuals think of the learning process after the experiment. Has there been any change in their behaviours? Has it contributed to more access to learning and which forms in particular? One may assume they have paid more attention to self-regulated learning for a while. The investigation could be longitudinal.

Two learners cannot provide a lot of data; the results could encourage enlarging the number of cases and including both juniors and seniors in the process. The photographic data is interesting as it is easily accessible, flexible, non-intrusive and can be applied to most professions. The picture represents a support for spontaneous responses; it facilitates access to embodied gestures and is specific to a situation even if the activity belongs to a category of daily activities. Moreover, a photograph can stand on a desk as a reminder for further learning opportunities or recalling past learning experience. It may allow comparisons with learning situations in positive and negative outcomes.

This will need further longitudinal investigation. This study shows its limitations relying on a sample in only one department. This approach could be extended to other professionals in different contexts. It aims at designing a programme where subjective experiences participate to capitalize and optimize individual and collective knowledge.

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"I have learned – It is about something that happened in the past!" – Time, space and human interaction in different perceptions of learning at work

Elina Maslo

This article is based on the empirical material collected when piloting new methodology in the study on working places as learning spaces. The article deals with different perceptions of learning and illustrates how different understandings of learning are constructed by two employees working at the same workplace. Using categories of spatial analysis the article show a hybrid space – a space when work and life meet each other and create new dynamics and inspirations for learning.

Keywords: working place, learning space, different perceptions, learning as multidimensional process

Introduction

Preparing for a new comparative study in the research network on workplace learning, researchers tested different ways of asking people about their learning at work. In one of the pilot projects, a very interesting conversation about learning took place right after asking the question about learning at work. It seemed that all participants in this conversation had different perceptions of what learning is. In this article, I will analyse this conversation in order to understand how different understandings of learning have been constructed by two persons from the respective workplace.

Learning is an extremely complex multidimensional process that happens differently to everyone. We are dealing with an extremely complex system of interactions between and within the individuals, between the individuals and their environment, and a host of subjective parameters, such as perceptions, emotions,

attitudes and values. Learning, aside from being a cognitive process, is also an emotional and social process.

These highly subjective processes are difficult to study. Therefore, in this study, a participatory photo interview (Kolb, 2008) is used in order to come as close as possible to persons' lived experiences and personal reflections about their own learning (van Manen, 1991). By capturing learning moments in everyday activities at work in a way a person perceives these as learning moments, and telling about these moments to the researchers, the persons allow us to get an insight into their unique, practical, emotional and symbolic life in the concrete historical context (Kramsch, 2009).

There are many reasons why we need more knowledge about human learning in general and human learning at work. One of them is the increasing complexity and changeability of working and learning spaces, demanding new forms of knowledge, new forms of work and new forms of learning. Learning spaces become more multiple and diverse, more fluent, and the borders between working space and living space are constantly changing, and so is the development of the technology. These complexities are the focus of interest to spatial theories, which aim to acquire an interdisciplinary relational understanding of how these spaces are constructed, and how they acquire meaning through human actions: "The spaces in which education and learning take place are undergoing almost continual transformation" (Brooks, Fuller, Waters, 2012, 1). This paper will perhaps take us one step further in the development of the understanding of learning as a multidimensional process in transformative learning spaces.

For this paper, I have chosen one conversation, which I analyse in order to understand, how learning spaces at work are constructed differently by the participants in the study. After presenting the pilot project, the article gives the state of the art of the discussion on working places as learning spaces. Then, I describe the approach to the study, its context, and finally – the analysis of the conversation and the two different visions of learning at work.

Pilot project – workplace learning at "The B&B-House"

This article is based on the empirical material collected while piloting methodology for the study "Working Places as Learning Spaces: Contextualising lifelong learning in Asia and Europe" conducted by the research network on workplace learning of ASEM Lifelong Learning Hub in 2014-2015. The aim of this comparative study is to document the diverse characteristics of occupationally specific working places in Asia and Europe. The participatory photo interview method, used in this study,

serves to enable the analysis of working places as learning spaces from the perspective of persons involved in the learning activities at work (Kolb, 2009; Lorenz, Kolb, 2009).

For the pilot study described in this article, two owners of a very small hotel in Denmark (*"The B&B-House – only 30 minutes from Copenhagen"*) were asked to document their learning at work using the auto-photography method. After a preparatory introductory conversation with the two involved persons, both have been taking pictures of the learning opportunities they experienced at their particular workplace for two weeks. Lastly, an interview about working place as learning space has been conducted by using the photos with each of the involved persons.

State of the art – working places as learning spaces – spatial dimensions

For some time, there have been several attempts to develop a united theory, where learning is seen both as a cognitive and a social process – or, as Anna Sfard (1998) describes it in her article "On Two Metaphors for Learning and the Dangers of Choosing Just One" – to use both metaphors: the one on learning as acquisition and the one on learning as participation. The same tendencies can be seen in the development of theory on transformative learning (Taylor, Cranton et al, 2012), workplace learning (Malloch, Cairns, Evans, O'Connor, 2014) and language learning (Kramsch, 2004).

For example, researchers working on the development of transformative learning theory are seeking for a more unified theory, where it would no longer be necessary to think in terms of dualisms such as rational vs. extra-rational processes, individual change vs. social change, autonomous learning vs. relational learning. These researchers argue that the two perspectives can coexist: "It may be that for one person in one context, transformative learning is a rational endeavour; for the same person in another context, it could be emotional and intuitive; in some contexts, social change may need to precede individual change, and in another context, individual transformation drives social transformation, and so forth" (Taylor, Cranton et el, 2012, 3).

These complex inter-relationships between adult learners and environments, including workplace environments, are not yet clearly understood (Kersch, Waite, Evans, 2012). Especially because these inter-relations are constantly changing: as the editors of the book "Changing Spaces of Education" state in their introduction: "Widespread access to and use of information and communication technologies (ICTs), and the emergence of a knowledge based economy necessitate an

understanding of the plurality of spaces (such as homes, workplaces, international space and hyperspace) within which learning can take place, as well as the "non-traditional" stages in the life course at which it occurs" (Brooks, Fuller and Waters, 2012, 1).
As a result, workplaces are now being acknowledged as sites for learning in various configurations, contributing to lifelong learning, personal development and social engagement of individuals (Evans, Waite, Kersh, 2011). Thereby, work is defined as "more than employment for remuneration and the considerations of place as more than a physical location for learning" (Malloch, Cairns, Evans, O'Connor, 2011, 1). "The ways in which adults learn in and through the workplace are rooted in educational trajectories and their complex intertwining with social institutions (of labour market, workplace, community) and social roles (of employee, citizen, family member) at different stages of the life-course" (Evans, Waite, Kersh, 2011, 355).

Persons learning at work belong to a complex system of actions and interactions, which is complicated to study. The metaphors such as "ecology" and "space" begin to replace the above mentioned metaphors of acquisition and participation in order to find a way to understand the complexity of factors without losing the entire multidimensional picture. There is a general tendency across the social and human sciences to move away from more modernist conceptions of linear progress and development through time to the notions of simultaneity and diversity, and thereby interest in space and spatial theory (Brooks, Fuller, Walters, 2012).

Here, space is understood relationally as "constituted and given meaning through human endeavour" (Singh, 2007, 197 cited in Brooks, Fuller, Waters, 2012, 2). Contrary to the notion of space as a static, passive geometrical phenomenon, space "is continuously produced through socio-spatial relations … space is conceived as a product of cultural, social, political and economic interactions, imaginings, desires and relations" (ibid.). Or, as Henri Lefebvre stated in 1991, space is both constituted through social relations and constitutive of them (Lefebvre, 1991).

Approach – learning (also at work) as a complex multidimensional process

The study reported in this paper is based on the social constructivist worldview, i.e. that human beings are actively constructing their own subjective "realities" according to their own identity in their particular situation. In other words, individuals develop subjective meanings of their experiences (Creswell, 2007). These meanings are varied and multiple and are developed and negotiated socially and historically.

Therefore, for the purposes of this study, human learning is considered as experience which adapts the notion of experience as both personal and social (Dewey, 1938). According to Dewey, both the personal and the social are always present. People are and need to be understood as individuals, but they are at the same time always in relation, in a social context. For this study, a criterion developed by Dewey is especially relevant – continuity – the notion that experiences grow out of other experiences, and these experiences lead to further experience (Dewey, 1938). "Wherever one positions oneself in that continuum – the imagined now, some imagined past, or some imagined future – each point has a past experiential base and leads to an experiential future" (Clandinin, Connely, 2000, 2).

Thus, in this study, learning is understood from the ecological, spatial, socio-cultural perspective, with a focus on spatial dimensions of learning (time, place and interaction). The ecological perspective implies that "activity in a meaningful environment generates affordances for enhancing that activity and subsequent activities" (van Lier, 2004, 80). The ecological view on learning entails that the context (physical, social, symbolic) is a central element in learning (van Lier, 2004).

Learning is an extremely complex multidimensional process that happens differently to everyone and involves a host of subjective parameters, such as perceptions, emotions, attitudes and values. Learning, aside from being a cognitive process, is also an emotional and social process. This happens in the interaction between people and their environment on the basis of their experiences (van Lier, 1996, 2010). The socio-cultural perspective implies that historical, cultural and symbolic activities provide resources for learning and action.

The perspective of social ecology provides a way into understanding the complexities of factors that impact on learning in the workplace, through the interplay factors, structures, processes and environments (Evans, Waite, Kersh, 2011). This interplay is not restricted to the workplace and can include all other life spaces of the individuals.

The concept of learning in, for and through the workplace applied in this study (Evans, Hodkinson, Rainbird, Unwin, 2006), underlines that social processes shape employees' perceptions and attitudes towards engagement in workplace learning and influence their professional and personal development and life chances within the workplace and beyond (Evans, Waite, Kersh, 2011). Therefore, the learning continuum between formal, non-formal and informal learning is a key framework for understanding how learning opportunities for professional and personal development at work are distributed, structured, experienced and used (Chisholm, 2008). The way employees perceive their learning at work is often associated with their perceptions of the space in which their learning is taking space (Kersh, Waite, Evans, 2012).

Methodological choices – studying lived experiences

When understanding learning spaces at work as constructed by the individuals who are participating in the everyday activities at work, some fundamental choices should be made when deciding on the methodological approach to the study. An attempt to come as close as possible to persons' lived experiences and personal reflections about their own learning (van Manen, 1991) has been applied in this study.

To analyse working places as learning spaces from the perspective of persons involved in the learning activities at work, a participatory photo interview method was used to invite the participants to reflect on their own learning (Kolb, 2009; Lorenz, Kolb, 2009). By capturing learning moments in their everyday activities at work in exactly the way that the participants perceive them as learning moments, and then telling the researchers about those moments, they allow us to get an insight into their unique, practical, emotional and symbolic life in the concrete historical context (Kramsch, 2009).

The photo interview method is chosen because of its potential for discovering local perspectives on daily life and involving local actors in a scientific process. "Using the photo interview, local cultural and social settings become visible as residents take photos that show their perspectives on the research question and their experiences with and understandings of the local context" (Kolb, 2008, p. 1). The photo interview can both provide us with the first accounts of data about learning, as well as encourage active participation involvement in the research process (Lorenz, Kolb, 2009).

After a preparatory talk, two owners of a very small hotel in Denmark *("The B&B-House"*) were asked to document their learning at work using the auto-photography method. After two weeks of photographing and reflecting on their own learning at work, two interviews were conducted with both employees. The empirical material analysed in this study consists thereby of a preparatory talk (first conversation), pictures taken by the two employees at their workplace during the two weeks, and an interview with each person about the pictures and their reflections. In this paper, the main focus is on the analysis of the first conversation with the study participants. Though, in the process of analysis all information from the pilot study project at "The B&B-House" is used.

The process of analysis is inspired by the recently developed method of analysis "analyzing in the present" by Line Ravsbæk and Lene Tanggaard, where these authors focusing on the significance of the reflexive open minded process of a researcher listening and re-listening to the empirical material (Revsbæk, Tanggaard, 2015). The authors describe the process of analysis as a process of "continuously opening up the empirical material in a reflexive, breakdown-oriented process of

analysis" (Revsbæk, Tanggaard, 2015, p. 376), recognizing the non-linear complex process of analysis where the researcher and the researched are closely interconnected.

By listening and re-listening to the qualitative material, the spatial categories as they are used in the narrative approach seemed to be useful to understand the differences in the perception of learning at work by the two involved persons. Already in the first conversation, analysed in this paper, a set of terms could be applied that in the narrative theory create a metaphorical three-dimensional narrative inquiry space, with temporality along one dimension, the personal and the social along a second dimension, and place along a third (personal and social (interaction), past, present, and future (continuity); combined with the notion of place (situation) (Clandinin, Connely, 2000, 50).

The usefulness of employing spatial analysis is documented in the previous research, for example by Brooks, Fuller and Walters. They state that by employing spatial analysis it is possible to indicate the differences across physical and virtual spaces, explore the relationship between structure and agency, and the relationships between social processes at different scales, as well as to interrogate some of the taken-for-granted assumptions about education and learning (Brooks, Fuller, Waters, 2012).

Context – desire for travelling as a drive for change of profession

The case presented in this paper is very atypical, but very interesting for the research. The chosen enterprise is a small hotel in Denmark – a Bed and Breakfast House – owned and driven by two persons who have retired from jobs that they had all their working lives. They work and live together in their own house, which at the same time is a hotel and thereby their work place as well. The enterprise is thereby a hybrid organisation – somewhere between organisation and civil society, and a good example of what research on workplace space describes as plurality of spaces (such as homes, workplaces, international space and hyperspace) within which learning can take place, as well as the "non-traditional" stages in the course of life in which it occurs, as mentioned earlier in this paper.

"The B&B-House" is a small-size enterprise located in Denmark near Copenhagen. It is owned and driven by two persons, who live and work together in the House. The hotel has two rooms for guests, a shared bathroom and a kitchen. After 10 years of work, the hotel have 500+ satisfied guests a year, who secured them a Trip Advisor medal in both 2013, 2014 and 2015 and a Super host medal in

2014. At the time of the interview, the Bed and Breakfast House was number 4 on the small hotels' ranking list in Denmark.

In one of the interviews, the hosts of *"The B&B-House"* tell that the idea to open their house to guests came because of their own love of travelling. After retiring, they wanted to ensure that they still could afford travelling. On the hotel's website, you can find the following text:

> "*Your hostess Eva says: "My husband and I have always travelled a lot – together and separately, all over the world. Curiosity and open minds combined with our language capabilities have given us a lot of good friends in many countries. Though we love to travel abroad, we also take the time to visit friends in our beautiful Denmark – and we have always welcomed guests in our home in Karlstrup Village."* (From the webpage of "The B&B-House").

The idea of converting part of a private home into a bed and breakfast was born during a trip to Lisbon, where the couple stayed in a similar establishment. Later in Denmark the two entrepreneurs learned how to run a bed and breakfast by opening one themselves. They learned a lot about running an enterprise, about peoples' psychology, developing new concepts for their work and many other practical aspects, and by using all their languages: *"We speak the following languages: Danish, English, German, French, Spanish, Italian and Portuguese. Being Danish, we also understand Norwegian and Swedish"* (From the homepage of "The B&B-House").

In the interviews, the owners of "The B&B-House" shared with the researcher that they definitely like to run a Bed and Breakfast at their home. And they are very proud of their success in the hospitality field. The two persons claim to have always been good at working together, at dividing tasks between each other and at helping each other.

Naturally, we also need to mention, what positions the two learning-at work-persons have held during their entire working life, before they retired and opened their home for guests. Eva has been a language teacher at school and has taught English, Danish, German, domestic science – and to private students also Italian, French and Spanish. Asger has been a math, history, geography and biology teacher as well as modelling arts and visual arts, woodwork and domestic science teacher. For 23 years, he also worked as the deputy school principal at a large school.

The conversation about learning analysed in this paper took place in the nice living room, full of books and interesting art at "The B&B-House". The hosts served coffee. The conversation did not go as planned, because of an extensive discussion on the notion of learning.

The first interview – "I have learned – it is about something that happened in the past"

In my analysis of different perceptions of learning at work, I would like to focus on one excerpt from the very first conversation with the two owners of "The B&B-House". The conversation took place immediately after the two study participants were introduced to the information letter, specifically developed for this pilot study. The conversation about the notion of learning begins after the two persons have read the instructions stated in this letter. The text started as follows:

> *"Information for the participants: Please take some pictures of those situations where you are thinking: "I am learning!" or "I have learned!" or similar. You can choose the …"*

Excerpt 1: Conversation about learning

> *Elina*: So … how do I learn in my every day at work …
>
> *Eva*: So, if there is "I have learned" it doesn't mean a long time ago, Asger!
>
> *Asger*: You learn something, and you learn something all the time, right? And something of it is the further development of something learned before. I can for example, say: "Earlier I took the big fat computer under my arm and was sitting there and working, later I got an iPad, right? I have learned to use iPad for our enterprise…
>
> *Eva*: Yes, yes … but no one is interested in this right now, Asger, don't you understand!? It is right now! What do you learn today?! What do you learn this afternoon!? Or tonight when he arrives ….
>
> *Elina*: But it doesn't have to be so … …. [*complicated*] … Here is your working place, and if you are thinking "now I have learned something" or "I am learning now!" – take a picture of it! And you don't have to think further about it … just take pictures! (*laughs*)
>
> *Eva*: But not anything with something that you <u>have</u> learned long time ago? You know, it is far too formal what you have got there! (*is saying this to Asger*)

> *Asger*: I am quite formal (*laughs loud*).
>
> *Asger*: (*reading the information letter)* I am learning or I have learned or similar … I "have learned" – it is damn something that happened in the past!
>
> *Eva*: No! Listen! In this situation, both can be used, because you have learned. It is not the same as it is … Elina is saying that it must be a moment when you are suddenly thinking "Ahh, here I just learned something!" – so it is – I have learned.

In this conversation, initiated by the interviewer and guest of "The B&B-House" (and author of this paper), Eva and Asger (the owners of the enterprise) are discussing the wording in the information letter, which they have just received from the interviewer. They start out by analyzing the grammatical form of "I am learning" and "I have learned" and begin to discuss of which kinds of learning they should take pictures. For Asger, "I have learned" means something that happened in the past. He begins to elaborate on learning as a product and thinks of a concrete example where he has learned something new – to use an iPad instead of a computer for his work. For Eva, however, learning is about something that happens in the concrete moment (and place): "It must be a moment when you are suddenly thinking "Ahh, I just learned something!". This means that Eva considers learning much more as a process than a product.

From the very beginning of this conversation, we understand that all three participants have their own visions of learning which differ from each other. Later, the analysis of the pictures taken by the participants about their learning at work will show that each participant has interpreted the wording in the information letter in a way in which he/she understands her/his learning in everyday activities at "The B&B- House". We will later find out that Asger actually considers that he is learning on the basis of previous experience that results in new knowledge and skills. Later on, we will also find out, that Eva learns in the communication both with herself when thinking and via verbal or non-verbal communication with other persons.

After intensive listening and re-listening to this interview and at the same time reading and rereading the book on narrative inquiry by Claninin and Connely', I realized that in this particular conversation we are able to follow what Clandinin and Connely call a metaphorical three-dimensional narrative inquiry space, mentioned earlier (Clandinin, Connely, 2000). Here we can follow temporality along one dimension, the personal and the social along the second dimension, and place along the third.

Three dimensional narrative space in the conversation about learning

Analysing this conversation, we can see that the discussion about learning goes much deeper than just into the discussion of the grammatical tense in the wording from the introductory material. I will now describe the conversation chronologically by using the categories used in the metaphorical three-dimensional narrative space mentioned earlier in this paper: temporality - past present and future (continuity), personal and social (interaction), and place (situation).

The interviewer (Elina) is introducing the conversation theme and tries to initiate the process of taking pictures by saying a very general "how do I learn in my every day at work…" statement. As a researcher who took part in the development of the study design for the pilot project, Elina has a clear picture of what should happen during the two weeks devoted to taking pictures at work. Elina knows that the researchers are interested in documenting the diverse characteristics of occupationally specific working places in Asia and Europe. She imagines that these characteristics can be physical, virtual, cognitive, social and affective and that the participants of the study will experience the taking of pictures of very different activities or situations – as learning situations. It is also the reason why she mentioned the word "situations" in the introductory material, which probably have pushed the participants in a specific direction – in thinking about moments in time and space.

The first phrase uttered by Eva tells us that Eva and Asger have already discussed the issue of learning before this conversation. That fact tells us that this particular conversation is part of a string of events on a timeline somewhere between the past and the present.

The same sentence uttered by Eva indicates that the content of the discussions was probably discussed between the two participants, and continues further in this conversation – the above-mentioned discussion about the grammatical tense and the notion of tempus in the phrase "I have learned". Does this form refer to an action taking place in the past? Is this action finished or unfinished? Is this action still ongoing or is it finished?

The first passage uttered by Asger is where he continues reflecting on the learning as process or result, as well as the continuity in this process: "You learn something, and you learn something all the time, right? And something of it is the further development of something learned before". Here, Asger expresses a very concrete idea about learning that happens continuously. The question is when can we call it learning, and when can we consider learning as a product that can be documented? At the same time, the role of the different experiences is articulated in these two sentences: new learning is the development of something learned before.

Then, Eva tries to defend her own vision of learning, and how she has understood the information provided to participants. It seems that Eva clearly understood that the pictures to be taken must capture the learning moments – something that happens right now, right here. Thus, both time and place dimensions are present here. Eva imagines the learning moment right now or in the future, for example, this afternoon. Something must happen if you want to capture the learning. Suddenly, Eva says: "Or tonight, when he arrives … ". It would not be possible to understand the meaning of this sentence without hearing Eva's stories about her learning in the second interview. When interviewing Eva for the second time, we will find out how important the third dimension of the metaphorical three-dimensional space is to Eva's understanding of learning – the one about the interconnection between the individual and the social, the one about the communication. Already in this preparatory talk Eva has a vision that she can start taking pictures when a guest arrives, and not before. In the beginning of the second interview, Eva says: "Unfortunately, I haven't learned that much, we didn't have so many guests". Essentially, Eva learns together with, from or near people.

Then, feeling that conversation becomes more complicated, Elina tries to calm her conversation partners down by saying that they do not need to think that much. They should just think about learning and take pictures. Look around, where do you learn? However, Eva is still trying to follow her agenda on convincing her husband that only pictures of "new" learning can be taken. It begins to look like a competition, where one participant wants to take more pictures than the other if one is allowed to take pictures of "old" learning alongside the "new" learning. Another issue becomes evident, namely formal and informal learning, which have not been discussed with the participants prior to this conversation. Eva expresses something that we cannot document or measure, but only feel intuitively by listening to and reading her words. There is a formal learning, perhaps school learning, and there is learning that cannot be measured. Later, we will find out that Eva understands learning in a philosophical way using much of her time thinking and reflecting: Is this learning?

Later in the conversation as can be seen in the next passage, Asger agrees with his wife that he is quite formal. It seems that this kind of discussion happens often between them. However, Asger does not give up. He reads and rereads the information letter and reflects on the wording: "I am learning or I have learned or similar … I "have learned" – it is damn something that happened in the past!". When Asger shows the pictures he has taken, we are able to see that he has captured the products of his learning: "the new vacuum cleaner that is very light – because he has found out that it is much easier to carry it to the second floor".

Eva continues to defend her grammatical knowledge saying that the sentence "I have learned" can be both used about something that happened in the past and

something that you learn right now, because the action is not finished: “In this situation, both can be used, because you have learned”. But she will not give up her notion about the moment in time and the idea that comes to your mind at the particular moment of time: “Elina is saying that it must be a moment when you are suddenly thinking ”Ahh, here I just learned something!” – so it is – I have learned.” When analysing this conversation, the following dimensions can be identified:

Time, space and communication in the conversation about learning:

TIME
- just happened?
- happened some time ago?
- finished or not finished?
- a process?
- a result?
- capturing only new learning?
- learning happened only during two weeks?
- completely new experience?
- further development of something?

SPACE
- physical, virtual, emotional, spiritual, … space
- cognitive, emotional, social factors

INDIVIDUAL – SOCIAL
- intrapersonal
- interpersonal
- between individuals and environment
- communication, interaction, thinking

Two persons – two visions of learning

The analysis of the empirical material collected in this pilot study show that all three persons participating in the analysed conversation have different perceptions on what learning is. By using spatial categories as time, space and inter- and intra-personality, we are able to describe these perceptions. Since Elina’s understanding

of learning is described in detail in the theoretical reflections of this study, we will focus on the two participants of the study: Asger and Eva.

Asger's vision of learning – practical learning for success

When Asger tells about his learning at work, he tells that he is learning everywhere in the house. He highlights places where he is constantly learning, for example, in guest's rooms: "*Here, you gradually learn about places where dust settles the most. It is always in the corners. Dirt always lies in the corners, under the bed…*". This is a kind of practical learning that happens over a longer period of time. But it can also be called learning, when the new knowledge or skills are achieved. Especially, when he speaks about his office – his computer and his phone - he says: "*Much of learning happened here around the computer*". Here, he is using the past tense and thereby illustrating that the process of learning is finished, and that today he has been running the enterprise well.
Some of the examples on everyday tasks at the enterprise, which have been acquired during the years of working in the hospitality business by solving problems, analysing, communicating and being creative are homepage developments, promotion of "The B&B- House" on these websites, planning and conducting daily work tasks. For Asger, good learning results in the appreciation from the outside. Probably that is the reason why it is important for Asger to communicate to the outside about "The B&B-House": he writes a letter for the local newspaper, gives interviews to the national magazine, and he also agreed to participate in our project. Furthermore, his work has been appreciated by several excellent reviews from his guests. As Asgers puts it himself, he and Eva have learned that they are good at hosting guests, which makes the guests always come back to "The B&B-House".

In addition to the numerous practical activities, Asger tells how he learned how to make their guests take the tourist brochure with them when they leave – you place it on the bed and that will ensure that they will take it with them. How to ensure that the night lamp does not break all the time by falling down – make it from plastic. How to make hard work easier – buy a smaller vacuum cleaner!:

> "*Here is a picture of two vacuum cleaners. I have learned this in the guests' room. This one is heavier than the other, and it has a long electrical cord. If we have a guest, who has lived in the room for four days, I take the big vacuum cleaner and do careful vacuum cleaning at the room upstairs. But if we have had a guest for one night only, and I have done extensive cleaning the day before, I can take the little one and easily just clean the*

> *small dust bunnies. And so it is done. It is much faster, and it is easy to carry. Therefore, we bought the second vacuum cleaner. I learned it when I was carrying the old one all the time*." (From the second interview with Asger).

Asger does not think that he learns when he is doing the routine work, for example when he works at the laundry room or when he washes the dishes. Only if he begins to do these practical everyday activities in some new ways.

For Asger, learning is a result of a problem-solving process, experiments take place, the previous experience is used, and the situations are analysed. We can therefore talk about continuity in time, a non-linear process that happens somewhere between the past, present and the future. All the learning which Asger talks about is work-related and happens at the workplace, physically or virtually from the computer at the workplace. He likes when this learning is visible and can be documented in some way. Therefore, Asger communicates outside the workplace, but the communication inside the workplace also has an important role.

Eva's vision of learning – the impulses of thought

For Eva, learning is a process or a moment in time and place – a kind of impulse that appears inside the head and initiates thinking and reflection. And these moments are often connected to people. The first thing Eva tells during the second interview is that she did not learn that much, because they did not have many guests.

Eva is learning with and through people. The first learning place she points out is the stairs right in front of the entrance door of the house. There she meets people, gets the first impression of them, speaks to them, changes her prejudice about people, learns from them about new countries, new perspectives about others – and herself. She learns a lot about herself in the communication with others: "Here I am learning the most, here we are standing and speaking with people".

Eva's experiences have a different nature than Asger's experiences. Eva's experiences are a part of the process of observing people. They can help or disturb your ability to judge people. Eva constantly analyses what she feels about the persons, and she is also learning from it.

Eva sees learning as a process that happens here and now, something you experience at the particular moment of time and in a particular place. And it is also about communication. Eva has a clear vision of what experience is: "Of course, you are learning in your business to do things better and better, more right, but you have only learned it when you use it the next time. This is the difference between learning

and experiencing. You have not learned anything if you are not capable of using it." Furthermore, being a curious person, Eva is learning by reading both the many books in their house and the internet, because she is interested in new places, new cultures, and new experiences.

Discussion – which questions can we ask?

In this paper I could only present a flash of all the interesting and complex empirical material that we collected with the help from the two owners of "The B&B-House". The aim of the analysis was not to find answers, but it can be used to ask new questions.

Later, an in-depth analysis of the notion of learning will be analysed together with the data from other pilot projects. Pictures and interviews will be analysed. Consequently, each case will be described and then compared with other cases.

The aim of my paper was to find out how different visions of learning can be constructed at a particular workplace and illustrate this with my empirical material. Therefore, I attempted to apply the spatial categories as developed in the narrative theory.

Many questions arise from this analysis. Let us discuss one of these questions: Can you re-learn something? Telling me about the practical things Asger learned by running "The B&B-House", he talks about something he learned and then re-learned. It is about chocolate:

> "*It happened right there! (points at the bed) Yes, right there on the pillow (laughs). Right on the pillow. Because I have learned... I have learned it, then re-learned, and then learned again. Because in the beginning, we did it, we put a little Mon Chéri chocolate on the pillow. It was sweet and nice. People were actually happy about it. Then we thought, maybe it is too expensive. It costs about 3- 4 Danish krona every time. So we stopped doing it. But now we began to do this again. We thought that it is stupid not to do this. No problem with those 3-4 krona. So… I have learned, then I have re-learned, and I have learned it again (laughs). Now we are placing a small chocolate on the pillows again*".

This is one of the questions that could be dealt with in this study. Is it possible to speak about re-learning? Should this example be categorised as making decisions, or is it a part of a learning process that happens over time?

Conclusions

The three dimensional narrative space is visible in all conversations with both participants. All three of us together are moving backwards and forwards on the timeline, when speaking about time moments, periods of time and continuity. We are located in the nice living room of "The B&B-House", but our thoughts are travelling in time and space, in our individual thinking spaces and in our social worlds. When telling stories, we are taken back to our memories into our emotional worlds, into the past and future. We are the products of our lives, our education, our families, and our friends etc. Everything is interconnected into complex systems that have influence on our learning and our future lives.

Although our two project participants have been living together for many years, they have very different perceptions of what learning is. Knowing that the two persons have been teachers, we can even make connections to the subjects they taught at school. Asger has been teaching science subjects, where problem-solving and experiments are the way of learning, for example math and physics. Eva has been teaching languages, and she has a very linguistic perspective on understanding learning.

The goal of this paper was to understand how different understandings of learning have been constructed by two persons from the respective workplace and exemplify the three spatial dimensions and the differences between these with an empirical example from the pilot study.

The example described in this paper is what we can call a hybrid space – a space when work and life meet each other and create new dynamics and inspirations for learning. It is also what Kersh, Waite and Evans (2011) call learning at the non-traditional stages of life, since the two B&B owners use their retirement to run an enterprise. We can follow how desire for travelling can inspire the long learning process, how the two persons construct the space of social relationships. We can also link it to the wider scale of activities, and how new forms of learning require new forms of self-governance, and how this process happens naturally because both persons love what they do.

The changing nature of work has some implications for learning at work. With this paper I will argue, that we need more research done from the subjective perspective of the people involved in learner activities at work. Further research on the complex inter-relationship between adult learners and environments, including work places, can help us to develop learning activities at work needed and used by employees.

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Learning Spaces for University Administrators – How and to what Extent they are Recognized

Daiva Bukantaite

The article describes learning places at workplaces identified and recognised by the university administrators. In the process of the qualitative research, during the participatory photo interview, workplaces and spaces of processes and human learning were identified that were expanded by the individuality, emotional accent, routine, fact, "hot event", peer assistance, social partner initiatives and alumni input subcategories. University administrators see learning in the workplace not as an indispensable activity when striving to accomplish a given task, but as a component of the task performance process.

Keywords: learning spaces, university administrators, participatory photo interview

Introduction

Many universities most often position themselves as exceptionally active, innovative, modern, research based organisations ensuring opportunities for the expression of personal freedom and initiative. These universities declare that they educate students that are brave, creative and open-minded, are not afraid to experiment and think critically. However, these organisations constantly face different challenges: increasing local and international competition, growing society expectations, financial pressure, higher education becoming a mass phenomenon, consumerist approach to the university (Vettori, Lueger, Knassmüller, 2007). Another exceptional challenge is the unavoidable internationalisation of the university activities, such as exchange of students and teachers, creation of international programmes and projects and establishment of the university subsidiaries or departments in other countries. Thus universities become not only the creators of knowledge but also service providers.

As Cardoso, Carvalho, Santiago (2011) observe, at present science has turned into a certain business that already cannot be effectively implemented into the frame

of a traditional university model. Orientation to the needs of society and specific people becomes one of the overall concepts of the new university. The most significant aspect of this idea is to acknowledge that the existence of the careless academic society is over, and the university has to refocus from "process" to "result", from teaching to learning, from traditional studying to learning based on information technologies or even open learning.

One of the most important developers of this process are university administrators who have no other choice but to react to changes "here and now", have to become manifold and have to be able to perform different activities. Thus the administrator becomes not only the executor of university undertakings, but also a learner in a specific activity. Still, in order to accomplish this new role, the assurance of the systematic development of the administrative processes is not sufficient; it is necessary to master new competencies and expand the scope of own learning opportunities.

The aim of the research: to identify the learning spaces of university administrators in their workplace.

Research questions:

- To what extent is the learning of university administrators in the workplace comprehended?
- What factors encourage university administrators to learn in their workplace?

Research methodology

The context of research. The research was conducted at the 8 universities in Lithuania. These universities represent by itself the classical universities with the number of students ranging from 6400 to 12000, providing the bachelor, master and doctoral degree studies in the fields from social sciences too biologic.

The choice of the research method. Participatory photo interview was chosen as a research method. Kolb (2012) and Edwards (2011) state that photographs are used to evoke a stronger impression as points of intercultural social intersections, sources of analysis, as a research object, visual and sensory systems. Larson (1988: 68)) calls

photography an image used as a mediator enabling the understanding of the research participants' attitude towards reality.

The research was based on the Social theory (Kilduff/Mehra, 1997) maintaining that knowledge is based on individual interpretation which in turn relies on the socially determined classification of reality. Knowledge is created by society and an individual. Valuable knowledge is not necessarily recorded, but it becomes a public agreement and is changing in the social context.

Data collection. The data was collected in several stages: firstly, the research participants were contacted, research questions were presented and they were asked to photograph their learning spaces at work; later during the interview the photographs were analysed and grouped according to the categories distinguished by the research participant. Participants answered the researcher's questions and reflected on their experience. In the process, the requirements of the participatory photography method presented by Kolb (2012) were followed.

Data analysis method. A qualitative content analysis method was selected (Mayring, 2000), allowing the analysis of the research data considering their compliance with the research questions, the experience of the research participants, as well as their opinion and feelings, sociocultural basis and the research environment. Qualitative content analysis allows the opportunity to discover obvious or hidden meanings, themes and models, instead of word counting and objective content selection (Zhang, Wildemuth, 2009).

Research sample. The administrators of 8 universities (two men and six women) participated in the research. Those under research were selected with the help of the convenience sampling criterion. The main requirement of the research participants' selection was the administration of international activity (work in the international department or with international students, organisation of teacher and student exchange, administration of international programmes). When describing the research results, research participants were coded by symbols P1-P8.

The research instrument was comprised of three interview questions:

- Tell why you chose this for making a photo. How are these photographs connected?

- How does the content of your photograph encourage you to learn?

- What competencies do you develop in the photographed situation?

Research ethics. All research participants benevolently took part in the research. Principles of confidentiality, personal dignity, information intelligibility, benevolence and ethics were ensured.

Research limitations were determined by the research participants' fears to be recognised.
In the article, university administrators are the persons performing administrative activities in the university; these are the employees of the Rector's and Dean's offices, as well as of different administrative divisions whose duties do not include teaching students.

The medium of knowledge created in the university

The challenges that modern universities face are numerous – to help orientate in the multitude of alternative approaches, theories and truths, to offer new knowledge systems and structures, to enable the person to live purposefully and comfortably enough in the super-competence mental environment, where there is a lot of confusion, mess and opportunities (Barnett R. 2000).

Universities also exist in order to maintain and create themes, ideas and things that can be out of fashion and unpopular, but would foster understanding that they are important (Jokubaitis, 2013). In 2009 F. Webster observed that a university is an oxymoronic institution, a set of different features, lacking a unifying idea – even academic communities cannot identify what their universities represent as they have lost the feelings of entirety.

A university is a corporative institution of researchers each member of which is immersed in a specific field of science; therefore, individualisation and intellectual autonomy are characteristic of the academic community members (Salamavičius, 2010).

According to Jucevičienė, Edintaitė (2014), a university as an institution of research and studies creates scientific knowledge and transmits it to the society, transfers the cultural heritage, adds to the progress of society, concentrates cognitive powers of individuals and promotes the changes of knowledge, meanings, abilities and competencies. It is significant that competitive advantage is increasingly acquired by those organisations which are able to employ all the knowledge of the organisation, collective and individual, explicit, implicit and tacit knowledge that earlier did not seem of value for the organisation or was not known.

Universities are knowledge creating organisations. Knowledge organisations have the main wealth – unique knowledge that is hard to copy, that has substantial

significance to the value of the organisation and the creation of products and services. This wealth, according to Misiūnaitė- Bačiauskienė, Jucevičienė. (2014) is the individual and collective knowledge and abilities of the organisation employees creating the competence nucleus of a knowledge organisation. The authors maintain that hereby a university faces a challenge to create and implement such knowledge management models and means that would stimulate, maintain and speed up organisational learning. Thus, if a university is a knowledge-creating organisation, it becomes, by itself, a learning place for all inside it. Consequently, organisational knowledge that is acknowledged as valuable becomes a learning result. In addition, it is noted that organisational knowledge reflects a functional approach to knowledge emphasising what knowledge is necessary to achieve the given organisational goals or to perform a certain activity. In the meantime, organisational knowledge covers all the knowledge of all the surrounding individuals, of all groups in the organisation and all knowledge of the organisation level – explicit, implicit (known, but not articulated yet) and tacit (Jucevičienė 2007).

In 1992, Argyris observed that organisations themselves do not learn; it is the employees who learn and act so that learning processes take place in organisations – the process of organisational learning is initiated. The organisation has to create favourable conditions for this activity. Organisational learning takes place at three levels: individual, group and of all academic community. Learning of an individual at the individual level is related with his specific activity carried out in the organisation. At this point, the knowledge conversion theory by Nonaka and Takeuchi (1995) has to be referred to - it speaks of the knowledge creation process as a continuous and interactive activity during which the tacit knowledge (unknown to the organisation) is converted to the explicit, knowledge is accumulated and its amount increased. Still, it is exceptionally important to avoid learning imitation.

In this article, knowledge is categorised as explicit, implicit and tacit. According to Awad and Ghaziri (2004) tacit knowledge is demonstrated in the activity, it is hard to articulate and it is acquired through experience. Implicit knowledge is perceived by the individual; he knows its structure but has not expressed it orally or in writing. It is enough to want and implicit knowledge is articulated, while the expression of tacit knowledge requires much effort, it cannot be even be expressed, according to Polanyi (1958), as it is hidden in activity and cannot be separated from it (Jucevičienė , Mozuriūnienė 2009). The mentioned authors say that organisational knowledge is comprised not only of the explicit organisational knowledge but also of the knowledge of individuals, their groups and the knowledge and knowing of all the organisational level that are characterised by the fact that all this knowledge and knowing are acknowledged in the organisation as creating value. Therefore, the organisation creates conditions for organisational learning enabling the formation of this organisational knowing.

The university being a place of learning in essence, where intellectual emancipation (liberation from stereotypes and from submission to authorities, thinking when in the process of discussion an appropriate argument is acknowledged as the most important one) is enabled through thinking and knowledge transformation processes naturally becomes the place of organisational learning. Learning processes are self-serving and generating new knowledge (Misiūnaitė-Bačiauskienė., Jucevičienė 2014).

Organisational learning is considered an essential condition for organisation design, development and improvement. According to the mentioned authors, organisational learning is in essence a multi-voiced, constantly renewing, transformed and transforming knowledge creation process.

The spaces of learning for university administrators

Three categories disclosing the main learning spaces recognised by university administrators were chosen to present the results, namely: a workplace, processes and people.

The 1st category. The workplace

A subcategory: Individuality. A workplace was mentioned by all the participants of the research. Often it is unregulated space that an employee can create independently (see Figure 1.).

> "My office desk often looks like it was after an explosion, complete chaos- a lot of documents and stickers. When the administrator asks, I sometime I put things in order. For me it is important that it is the space where the creative process is happening, it is not only about the documents, but also about the new ideas, I solve everyday problems and emerging situations at my desk. (P8)".

A desk is also related with technologies used at work – a computer, a telephone, the Internet. The Internet is the unlimited learning space not only at work. The Internet is first of all searched for the necessary information, it also provides leisure opportunities.

> "The Internet is the place for me where I am every day, I search for the necessary information, I read news portals, different article; I don't have a profile in any social website. My colleagues often listen to music in the Internet, but it doesn't help me at work. I can record learning when I am searching for something specific, for example for the meaning of the word or a sample of a document that I need to prepare (P6)".

A desk is treated as a symbolic place for building relationship:

> "I photographed two cups. I share a desk with my colleague with whom I not only drink coffee; we also solve all the problems. Everything is discussed, we share everything. This ever-day communication is undoubtedly the space for learning as well (P1)" (see Figure 1)

Figure 1: The office desk

Subcategory: Emotional highlights as a learning category were distinguished by research participants in a form of symbols (photos, souvenirs, lucky charms, etc.). On the one hand, a symbol probably could not be taken for learning space, but still it is very important for the learner as a component of that space. Symbols are related to identity and something personal, significant only to the specific person or a group of persons. It is interesting that all photographed symbols were connected only with the job (see Figure 2)

"This little angel has travelled to all my work places. It reminds me of where I come from. It is a small gift from my first work place where I started as a student and every day I was learning from my colleague, where I felt good. I don't want to forget that and I wish that the mood of the time would follow me everywhere (P1). One administrator – the research participant photographed her child's picture. "When looking at my daughter's picture I draw inspiration and I smile. How much is that connected with my learning at work? After all, I am working not only for myself, but for her, as well. She inspires me for my further activity and work (P3)".

"Atmosphere", "mood", "a sense of community", "team spirit" are often indicated by some of the research participants as incentives for learning in the work place. They maintain that it is the most important factor determining their aspirations for development and creation of a higher education institution that would be pleasant to be and work in. "If you do your job and a little more than you were asked to, you always receive acknowledgement. That acknowledgement motivates me for further activity and learning (P4)"

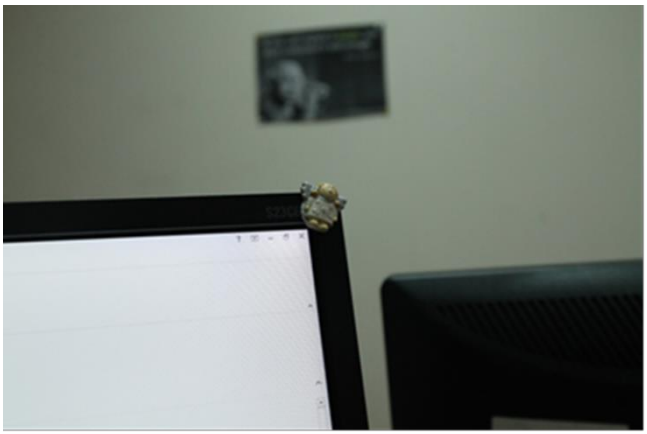

Figure 2: A lucky charm in the workplace

The 2nd category. Processes.

Subcategory: Routine. The everyday activity processes that are more dynamic and therefore harder to photograph were mentioned by the majority of the research participants.

> "Daily activity, creation of something new, one job after another – this is the main object of my learning in the work place. They are numerous and it is hard to single one out. I made a photo of an event plan and the identification card. Activities are intertwined. You would not be able to organise an event alone, you communicate, plan, run around. Often no one cares how much time you devoted for it, it is the final result that matters and in our case it has to be perfect. (P6)" (see Figure 3).

Processes are not only daily routine activities, but also strategies, formation of future activities that takes place constantly.

> "Strategy creation is my invisible place for learning at work. We have a file where we record everything that is necessary to implement, what is important for us and our future. When we generated ideas and we did not record them, we used to lose them, therefore was a place found for their accumulation. Work with ideas is my favourite activity. (P5)".

The creation of strategy is distinguished by creative activity related to daily processes.

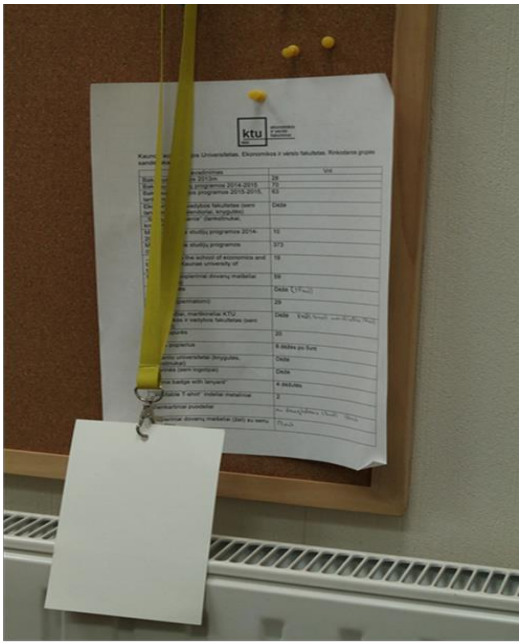

Figure 3: The plan of a future event

Subcategory: Facts an individual category of learning in the work place signify different past activities (events, projects, sessions, meetings). Some of them are remembered with pleasure, others - with sadness or even bitterness. Each of the accomplished activities provided experience perceived as learning in the work place.

> "No one asks me if I can do it or I am able to do it, I just get a task and I have to do it. Then I have to ask a lot of questions, to make many plans and mistakes. Here is the photo of my first big event in another university, where started work a few years ago. There were a lot of mistakes in the organisation process, a lot of emotion, but now, when organising other events I know precisely which parts are the most slippery, what needs the most attention (P3)" (see Figure 4).

Figure 4: A moment in the conference

Continuous constant feedback as a learning motive was recorded in many interviews. Research participants emphasise the need of qualitative feedback.

> "It is really bad when I make the same mistakes again and again. They appear when the in time given for their analysis is insufficient or because of the failure to understand that my action which seems to be appropriate would not be good in this particular situation. (P5)".

Subcategory: Hot events. The work of the university administrator is comprised of many activities, one of which is the most painful in terms of time and emotion. These are different situations that are supposed not to be publicised – complaints, problems, dissatisfaction, situations where people feel undervalued, insulted or hurt. These are moments when it is necessary to make a decision that might not be acceptable to all, when one has to assume responsibility.

> "I don't know how to make a photo of problem solving. These are some events where one side necessarily unhappy and hurt. In such situations an administrator has to absorb everything, to clarify the situation, make a decision and assume responsibility. They are emotionally exhaustive and violate self-worth. These are the situations where it is hard to assemble oneself again and work further as usual. But you still can learn from them. After that you become more careful, more reserved, but at the same time you feel vulnerable (P2)"

Learning in "hot events" is recorded when the problem is solved or analysed.

> "If the problem is left unresolved, it does not facilitate learning. Learning only happens when it is analysed, when you notice that in another similar situation you are not repeating the same mistakes. Unfortunately, it happens that there is no time left for the analysis of the problem. (P1)".

The research participants agree that different conflict situations are followed by either the appearance of new documents (the absence of which determined the conflict) or a promise "not to do it any more" which cannot be called learning if the situation is repeating.

> "After the conflict at work, I either promise to myself that I will learn from this situation, and I will talk less or will not show the initiative if no one asks. A conflict may also create additional work, for example, creation of some rules. Some document is not the learning space – the absence of such document or ignoring I, as well as everything that follows make up the learning space. (P3)"

The 3rd category. People

Subcategory: Peer assistance. Considering the specificity of a higher education institution this learning space is the most likely as a category.

> "I am leaning from my colleagues, they are older and more experienced and they willingly share their knowledge (P7).

Colleagues were photographed by all the research participants. Relationship with the colleagues as a form of learning most often emerged when other photographs were discussed.

> "My Dean is my teacher, my mobile learning space at work. Daily conversations, search for solutions and event analysis are like a flooded river. I would say that it is my main learning stimulus and engine at work. (P4)".

Common activities were distinguished by the research participants as a team reinforcement tool and not so much as a learning space.

> "A team is mostly reinforced by common work. Here is the picture where everyone is in a good mood before work in the garden. There are not many of us. Being there I had a feeling of community which is very important while working with an international team. I presented this photo because work offers opportunities to see cultural differences that you would not learn about from books or articles. (P3)"

Subcategory: The initiatives of social partners. Research participants emphasised people who are not university employees – these are future students and their families, present employers, partners of student practice organisation, sponsors, managers of different projects, competitors.

> "I am learning by observation, especially it concerns my greatest competitors, even when I am making decisions I think what they would do. As I am also responsible for marketing, I always observe what and how they do, what means they use, how they communicate. I have a box where I keep the collected adverts, brochures and other things" (P3)

A fairly close relationship between university administrators and social partners and their significant input in the ongoing processes especially in the strategy creation and positioning of the higher education institution were also disclosed. It turned out that social partners eagerly involve into different activities happening in the higher school.

> "I remember one meeting when we were planning a future event. We just came without any idea. During the meeting, one social partner directly remarked that it is not good, because in order to achieve quality advance preparation is necessary and there is no point in spending the time if the idea is not yet generated and there is nothing to discuss. Those meetings were true lessons to me. (P6)"

Subcategory: The alumni input. The research showed that university administrators value the input of former students in the development of university activities. Alumni actively participate in the development of study programmes and the university promotion. They are officially included in study committees and it allows the improvement of university activities on the basis of specific suggestion and practice. Learning is identified in the work relationship and conversations

> "The meeting of the study committee, when our former student who is an attractive employer now is present, is learning in the workplace for me. He

relates all things with the labour market and encourages us to think to what extent these things are important and useful (P1)".

The discussion

The learning of university administrators in the work place in pursuance of higher education quality is inevitable and kind of self-understandable. The accomplished research allows the conclusion that different activities performed at work are still not directly associated with learning. For example, one research participant identified only the formal kind of learning (courses, seminars) stating that all situations are learned not in specific spaces, but from life experience that is applied at work for the accomplishment of the given tasks. In the opinion of this participant only formal learning (seminars) is to be considered learning in the work place, but seminars are too few as it is expected that the academic staff of a university are high qualification workers who have to cope with all tasks on their own.

The analysis of the research results showed that the learning spaces of university administrators, on the one hand, are recognisable due to the study performance function characteristic of these learning institutions. On the other hand, they are highly personalised and determined by the employee experience and functions. It was observed that often these spaces are not perceived and realised. Daily activities, habits and functions were defined by university employees as learning in the workplace only after they were asked to think about that. In the opinion of the research author, it is determined by not giving time for reflection about personal activity when daily routine often influenced by the university activity cycles overshadows the analysis of individual activity.

The opposite results were presented by Bakutytė, Ušečkienė (2016), who maintained that learning in the work place of primary class teachers is identified and is determined by external conditions and employee disposition. Primary class teachers' learning in the work place is defined by the following dimensions: receiving, accumulation and dissemination of information, analysis and development of the teaching activity and competence development.

In the process of systematising and describing the learning spaces of university administrators, categories of dynamics and statics are distinguished. The process (routine, facts, "hot events") and people (peer assistance, social partners' initiative, alumni input) categories could be considered dynamic while the category of the work place (individuality, emotional highlight) is static. Not only daily, but also projected learning was observed related with the strategy creation when employees are planning future activities and spheres of self-development.

University administrators are mostly encouraged to learn in the work place by expectations when having been delegated some functions a maximum good result is anticipated. Satisfaction of expectations is the most prominent factor deciding the learning of university administrators. The importance of microclimate comprised of permanent feedback and development of interpersonal relationship has also been given attention. These results confirm the statement presented by Tought. (1978) saying that adult learning is a natural process. Adults participate in a variety of learning activities usually planned by them. According to the author, learning is stimulated by the application of knowledge, abilities and skills in life and it is their practical value.

The analysis of the emotional factor showed that trusting and encouraging the employee could work as a factor stimulating learning in the work place and the employee's responsibility for the accomplished activities.

Conclusions

Learning in the work place of university administrators is perceived only to some extent. Often learning is identified as a component of activity to accomplish certain tasks and not as an indispensable act in order to perform the activity.

Concord of factors significant for career, aspiration to satisfy the expectations, self-realisation motives and suitable microclimate encourages the university administrators' learning in the work place. Trust in the employee emerges as the most important factor ensuring the process of learning in the work place.

The following spaces of university administrators' learning in the work place were identified:

- A physical work place distinguished by the created individuality and emotional highlights,
- routine, historical and "hot events" processes,
- peer assistance, social partners' initiative and alumni input.

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Ways in which Learning Spaces Mediate Learning and Assessment

Helen Bound and Arthur Chia

In this article we consider learning spaces as the relations between the practices within the space; the material things such as tools, the ways of thinking, the discourses, the doings, sayings and historicity of these practices, the individual biographies of those participating in the learning space. Additionally learning spaces interact with; indeed have embedded within them doings and sayings, discourses, affordances and constraints of the contexts which are also constituted by these dynamic interactions. We use two case studies from a research project conducted in Singapore on, 'Assessment for the changing nature of work' to explore how the learning spaces mediate learning and assessment.

Key words: assessment, work, learning spaces,

Introduction

In the literature and amongst various groups of practitioners, the discourse of learning has shifted beyond metaphors (Sfard, 1998) of acquisition (and transfer), and in some instances beyond participation. Such a shift enables the questioning of long-held assumptions such as learning as a purely individual and cognitive processes, separation of work and learning, the privileging of content and setting up dichotomies between mind-body and knowledge and practice evident in classifying content into knowledge, skills and attitudes. We argue that learning is mediated by, through and within a context, not as separate from it. But it is the participation metaphor that is of particular interest for this Article. Building on and moving beyond the participation metaphor of learning the idea of 'learning space' or thinking about learning spatially conceptualises learning as socially situated in contexts that provide affordances for learners to integrate learning and work and to achieve membership in work cultures and/or communities of practice. This holistic

understanding of 'space' invites us to consider the relational aspects of learning that include how work and learning are mutually constitutive in practice; the dynamic nature of context encapsulated in the notion of "changing nature of work", and the emergence and integrated-ness of learning. In using a practice lens we consider its contribution to our understanding of learning and assessment within learning spaces.

Relational aspects of work and learning within and between learning spaces is the focus of this article. We use data and findings about learning and assessment practices based on two semi-ethnographic case studies to highlight some dimensions of assessment as they occur within learning spaces at, through and for work. These cases are based on a research study we conducted in Singapore involving six diverse case studies (explained later in the article). In the process of exploring the relational aspects of learning spaces we also question and critique common understandings of assessment as separate from learning and as separate from work.

We commence the article with a brief explanation of the case studies to provide some context for when we refer to them later in the article; additionally we layout our working assumptions about assessment and learning. We unpack our understanding of learning spaces through drawing on data from a number of our case studies and conclude by drawing together the points we have made about how learning spaces mediate assessment practices and what the implications may be.

Why assessment and learning spaces?

The case studies are drawn from our project, "Assessment for the changing nature of work" (Bound, Chia & Karmel, 2016). This research project addresses how assessment design and practices can meet changing policy directions and workforce development needs in Singapore.

New policy initiatives

It responds to government policy, economic and labour market changes, changes in the continuing education and training (CET) industry sector (closest equivalent is vocational education and training (VET)); recent changes in government policy were also an impetus for this project. In 2015 SkillsFuture became a major workforce development policy, placing a focus (amongst other strategic thrusts) on what Singapore's Deputy Prime Minister calls "workplace-based learning" (Shanmugaratnam, 2014). This new emphasis – a major shift from delivering

training for CET via classrooms (Bound & Lin, 2010) – requires a very considerable rethinking of learning and assessment for CET professionals, training providers and institutes of higher learning. Other reasons for the project include that Singapore's CET practitioners have long been looking for alternative approaches to assessment where the practice of teaching and learning for the test if oft observed. And, of course as the project title indicates there is the changing nature of work.

SkillsFuture is in part driven by changes in work and in labour markets in response to global shifts in capital and investment around the globe. Prime Minister Lee Hsien Loong announced in October 2015 that the Committee on "The Future Economy" will "study how to create opportunities and move faster towards higher skills, innovation and productivity" (Straits Times 18 October 2015, B1).

Changing nature of work

The increased sense of urgency to move to "higher skills, innovation and productivity" is but one of many pressures faced by both employers and workers. The hollowing out of the middle (Brown, Lauder & Ashton, 2011), the growth of non-permanent work (Bound, Sadik & Karmel, 2015), and technological change can be added to the list. Multiple career changes (of a minor and/or major nature) and the subsequent changes and requirement for learning, developing new skills and adapting to often rapid changes in management and cultures are also part of the landscape of work. These issues are seemingly far removed from learning and assessment, but learning and assessment can be one lever to prepare learners for unknown futures, preferably in ways that are also beyond work.

When we consider "the changing nature of work" we also consider that assessment can be designed and practiced in such a way that it can help prepare people, not just for a job or work, but for an evolving engagement in work that may not yet be known. Technological change, changes in forms of production, merges, movement of capital and outsourcing resulting in a variety of forms of non-permanent work are now very much part of the landscape of work. Different forms of production (Victor & Boynton, 1998; Engeström, 2004) require different skill sets that are not necessarily stable. In Singapore over 70% of jobs require a range of specific generic skills; other generic skills such as teamwork, planning and problem solving are utilised by most industries (Sung et al, 2010). Deming (2015) suggests that employment and wage growth is strongest in jobs that require high levels of both cognitive and social skills. Generic skills are becoming increasingly important; important not only because they are an indelible part of our work, but also because they are necessary in negotiating transitions. Whether it is jobs that existed many decades ago or jobs that no longer exist or that will exist in the future, what

constitutes professional practice in these jobs has evolved along with advancements in knowledge and technology. It is no surprise that the nature of work is changing – it has always been changing. What is, perhaps, surprising is that people are now becoming concerned over the adequacy of educational legacies in helping prepare people for this changing nature of work. Assessment and how we understand and use it is an important aspect of this new look at education in relation to work.

Using a practice lens

This rationale begs the question of how we understand learning and assessment.

When we understand learning spaces as relational, dynamic (ibid) and inclusive of practices (Schatzki, 2012) it becomes evident that learning is far more than acquisition and also more than as represented by Sfard's participation metaphor (1998). A practice lens enables us to strongly connect with our understanding of the changing nature of work. That is, as practices are emergent, not stable, so we understand the world of work to be constantly emergent. We conceive learning as an ongoing process; the individual and collectives can reproduce social relations and practices or change practices (perhaps in quite minute ways) as they make decisions, and take action within everyday routines (Reckwitz, 2002). Thus it is human action that gives meaning to different spaces. Within these different learning spaces and in the process of engaging in work practices we are constantly in the process of 'becoming' an engineer, a cook, a doctor and so on, albeit within the particular circumstances of the work. That is, knowledge, values and skills are not separate from the context of practice (Zukas & Kilminster, 2012). Identity (as a cook, a doctor, a firefighter, a leader, for example) and agency for learning make sense when we understand that knowledge is not static, that practices are emergent, and generate their own understandings and is relational, dynamic and provisional (Fenwick, 2004; Fenwick, 2000). Agency for learning is mediated by individual sense making of the context, as the context is mediated by the actions of individuals and groups, informing "ways of knowing, doing, and feeling" or in other words "a way of being" (Edwards & Usher, 1996).

So what is a "practice"? A practice is a "constellation of different people's activities… it embraces multiple people. The activities that compose it… are organised… a practice is an open-ended, spatially-temporally dispersed nexus of doings and sayings" (Schatzki, 2012, pp.13-14). It is inclusive of rules, understandings, resources, purposes, material 'things' and the relations between them. Hager, Lee and Reich (2012) outline five principles for theorising professional practice; practice as knowledgeable action, as embodied and materially mediated

doings and saying, as relational, as evolved in historical and social contexts, power relations, and as emergent (p.8).

Conceiving of learning spaces as constituting practices, as relational, dynamic and emergent enables learning and assessment that is holistic and authentic. Using this lens we understand learning as more than participatory, as through a practice lens we understand that relations between agent and artefacts, tools, ways of knowing and doing, procedure and policies and all that make up the spaces of work, contribute to, are resources, and prompts for learning. Learning is deeply embedded in the spaces of work where work is both constituted by and constituting of learning. We argue below that assessment too, in the form of formative assessment is also deeply embedded in the spaces of work as feedback is engaged in and received constantly and through multiple sources. Such an understanding of learning and assessment challenges the idea of learning as an activity distinct/separate from other kinds of activities. Instead of boundaries and demarcated spaces, we posit the idea of work and learning as mutually constitutive rather than something contained within prescribed entities such as individuals and institutions.

What is assessment?

In keeping with the acquisition metaphor of learning, assessment has traditionally been considered in terms of measurement of the learning of the individual and as being objective and is done *to* learners. We take a different stance, one in keeping with our focus on the changing nature of work and the complex realities of assessment for, in and through work. We understand assessment as a process of making judgments; assessment is done *with* learners; in making this argument we recognise learning as a process with intentional goals. Judgments are made over time from multiple sources based on multiple forms of evidence. Assessment is a diverse and multifaceted range of phenomena, activities, systems and actors working within and across multiple contexts that contributes to learners' constant process of 'becoming' – a process that never ends.

For some time now assessment has been discussed in terms of assessment of learning (summative), for learning (formative) and as learning (see Earl, 2003). As a point of reference we define here what we mean by these terms. Assessment as learning is an aspect of sustainable assessment (Boud, 2010), so we capture it within our understanding of sustainable assessment. *Summative assessment*, sometimes referred to as assessment of learning, is what most people think of when they say 'assessment'. This is no doubt because the purpose of summative assessment is to certify the achievement or progress in learning. It is typically conducted at the end

of a course or a programme (Earl, 2003). Summative assessment has a long history of being 'what counts' in gaining a qualification or some kind of certification. *Formative assessment*, or assessment for learning, focuses on participants' learning, helping them to know how to improve (Gardner, 2012). Participants need continuous information from a variety of sources about their learning; information that informs what they are succeeding at, and where they should put their efforts to improve and strategies for moving forward (Berry, 2008). Assessment for learning does not necessarily include grading, assigning marks or noting the learner as competent or not yet competent. Feedback is a critical aspect of assessment for learning. The focus in more recent work on feedback is on "the contribution of others to learning through assessment, and repositioning the notion of feedback not as an act of information giving to students, but as a co-productive process in which both students and others have key roles to play (Boud & Soler, 2016, p.403). *Sustainable assessment* equips learners not just for meeting, but prepares them for what might be required in the future, after graduation. Sustainable assessment includes "the capacity to evaluate evidence, appraise situations and circumstances astutely, to draw sound conclusions and act in accordance with this analysis" (Boud & Soler, 2016, p.19). Key elements of developing informed judgment from the perspective of the students include: (1) identifying oneself as an active learner; (2) identifying one's own level of knowledge and the gaps in this; (3) practising testing and judging; (4) developing these skills over time; and (5) embodying reflexivity and commitment. Sustainable assessment demands that learners make conscious comparisons between self-assessments and assessments by teachers, peers and other stakeholders, and that responsibility for the assessment process must gradually shift from the teacher to the students, because, after graduation, people themselves need to drive their own learning (Boud & Soler, 2016).

The six case studies

What follows is a brief explanation of the case studies. We deliberately set out to identify a diverse range of cases in terms of assessment practices, types of providers, range of spaces in which assessment took place (classroom, work and e-spaces), and different types of accreditation frameworks. The list of cases is set out in Table 1. The commonalities between these cases are that they all involve both formal (structured) and informal assessment practices; they are applied, in that they are preparing people for work compared to general education; and the programmes are strongly influenced and validated by industry standards. We focused on assessment

practices that leverage on the opportunities and affordances of work and industry expectations in order to help prepare people for their futures.

Case	Certified Accrediting body	Duration	Assessment activities	What each Case highlights for Assessment
Workplace learning facilitators	Yes IAL	10 months	Formative assessment from coaches Summative assessment through learning journal, enterprise report, and final assessment interview 70% attendance required	Learning as "becoming" through the achievement of a set of competencies which confer recognition as a workplace learning professional.
New promotional menu items	No N.A.	4 weeks	Live cooking demonstration Written feedback from chef Showing cooking team how to cook new menu items Observation by outlet supervisors after launch of new menu items	Learning of "aesthetic" and "taste" is an integrated and holistic process. The knowledge & skills cannot be boiled down easily into separate tasks. And learning involves development of learners' judgment for his/her own work.
Rota commander	Yes WDA	7 months	Simulated exercises Written theory tests Presentations	The learning of "leadership" is about the internalization of the ethos & values of the profession. Learning is an embodied process of doing, practice and experience.
Resident doctor	Yes Singapore Medical Council ACGME-1	3 years	360 feedback Monthly evaluations Mini CEX	Learners have different and sometimes conflicting roles to fulfil as a practicing doctor and student. Any "new" (formative) assessment

Case	Certified Accrediting body	Duration	Assessment activities	What each Case highlights for Assessment
				tasks compete with other priorities and needs.
Aircraft engineer	Yes CAAS WDA	3 years	Individual Final Year Project Summative assessment through learning journal, FYP report & final presentation	Students' Final Year Project requires application of concepts & skills; have real work utility & suggests complexity. It expands the notion of "authenticity" beyond just "real work".
IT Network Engineers	Yes The provider WSQ assessment is optional	1 week	Observation of basic skills by facilitator Formative assessment of problem solving exercises Written test involving a range of network problems to identify	Learning & assessment focus on "ways of being" an IT network engineer that includes developing analytical thinking for problem solving, developing understanding of whole systems – global, national and organisational and in-between.

Table 1: The six case studies

IAL: Institute for Adult Learning; WDA: Workforce Development Agency; WSQ: Workforce Skills Qualifications (Singapore's competency-based training qualification system)

Being a semi-ethnographic study our data consisted of semi-structured interviews, focus groups, observations and analysis of curriculum documentation and some assessment artefacts. We had a total of 105 pieces of data; discussions with participants in the observations are counted as part of the observation, not separately.

Interviews and focus groups were recorded and transcribed. The researchers read and reflected on these as the transcribing was completed. The transcriptions, documents and field notes from the observations were imported into NVIVO (software to assist with organising and analysing qualitative data). This data was then coded thematically using a process of selecting one case (F&B) for the initial development of the coding tree which involved all three researchers coding interview transcripts and observation notes of this case. The team met and used Kappa co-efficient score from NVIVO to flag out and focus discussion on different interpretations of the codes and data. The coding tree was refined and more detailed definitions of codes developed. The refined coding tree was used to re-code the F&B case, followed by a research team meeting to compare again for further refinements before coding the remaining cases. For inter coder variability checks each case was assigned to a researcher who took charge of coding and writing that case. In addition the other two researchers analysed one or two transcripts/data sources of a case that was not their own. Researchers meet every fortnight to check interpretations and any emerging issues with consistency.

Learning spaces for cooks in a restaurant chain

This first story comes from the Food and Beverage (F&B) change in menu case study. This case study illustrates the practices and the relational aspects of learning spaces and how relations in this space are mediated by the mode of production and the staffing issues endemic in the sector. In illustrating practices and relational aspects of learning spaces we also highlight how work and learning inform each other, and the role assessment plays in enabling work and learning within the different learning spaces within the F&B chain in Singapore, including a centralised kitchen and kitchens in the outlets.

Possibilities for learning in these spaces are mediated by the focus of the restaurant chain; that is, the food needs to be consistently the same in all the outlets and to facilitate this, as much as possible is prepared in the central kitchen and sent to the outlets (e.g. sauces, marinades, pre-prepared mixes, etc.), where cooks add the fresh ingredients. This mode of production is about ensuring consistent quality, presentation and taste across all the different outlets; there are elements of a

production line here that mediate the purposes of training and place limits on the extent of development of the cooks.

To fulfil these needs, the restaurant chain conducts its own in-house training and assessment sessions for cooks who are deployed at the various restaurant outlets. The goals of training are to enable cooks to deliver the desired quality and consistent standards of newly launched menu items in a timely manner. The cooks at the outlet kitchens are expected to achieve the same aesthetic and taste criteria or standards as the Development Chefs (based in corporate headquarters) who design the menu as well as train and assess the cooks. The training goals and learning outcomes are conceived with fundamental business concerns in mind like meeting customers' needs, optimizing resources and minimizing costs, typical of this form of production. The thinking about learning outcomes begins at the stage of planning and designing of the new menu, and it rolls into training, assessment and final delivery of the new dishes. The training manager has to juggle between the different needs and priorities of the business, training/learning outcomes and the cooks' welfare. He continuously seeks different methods and ideas to develop and drive training/learning and assessment in the workplace. And the pragmatic approach that the training manager adopts for training/learning renders the learning space into a highly fluid and experimental one, yet what the cooks learn is in keeping with their role as production cooks in a chain producing the same dishes with consistent quality, appearance and taste. The form of production, then contributes to learning possibilities in the 'spaces' of this organisation. It also contributes to tensions that the training manager works with every day; on the one hand he needs compliance and staff who are trained to produce consistent standards, and on the other he constantly seeks how best to utilise the time and energy of his staff with their welfare in mind, but he is driven by company demands.

Because cooking is far more than following steps, assessment of and for the cooks seeks to engender professional 'senses' like taste and 'sensibility' including the dispositions, capacities and ethics for work in a professional kitchen. Developing taste proved problematic in the training taking place in the development kitchen, observed by the researchers; so much so that although it was an intended learning outcome, it was not assessed and barely touched upon in the training, thus there were missed opportunities for formative assessment of taste. Taste poses a challenge for assessment – what is 'taste'; how is it learned, and how can it be assessed? Taste as a form of knowledge highlights the different modes of knowing/learning involved in assessment. It cannot be boiled down to categories of skill and knowledge, and its learning cannot be easily distinguishable from the learner and that which is learned. Cooking like other types of skilled work such as masonry and carpentry are 'communicated, understood and negotiated between practitioners largely without words, and learning is achieved primarily through observation, mimesis and

repeated exercise' (Marchand, 2008, p. 247). The 'know-how' of cooking is not easily conveyed through formal teaching/learning processes or outside of the professional kitchen setting. Much of what the chefs and cooks do, know and learn are tacit in nature – the work that they do and the knowledge they possess are intuitive, cannot be described easily, and is highly contextualised. These professional ways of knowing are an important aspect of learning spaces and are evident in the materiality of practices - as in the tools used, the sayings and doings of particular practices.

The vocation of cooking and its traditional ways of teaching and learning and the understandings of learning and assessment of the Development Chefs interact, in this instance, to close down possibilities for learning and formative and sustainable assessment. The development chefs had no pedagogical training or background so were reliant on using teaching methods as they were taught. Opportunities to discuss how the dishes the cooks had prepared tasted different and why, were perhaps not 'seen' as possibilities. Such a discussion potentially disrupts the power relation of master cook to apprentice. It places the Development Cooks, who may feel quite uncomfortable in managing a discussion that is not controllable, that may be exploratory, in an invidious position. When placed outside our comfort zones it is not unusual to resort to traditional forms of power relationships. To change this relationship would require developing the Chefs' pedagogical expertise, so see that opportunities to develop the language of taste as cooks tasted each other's dishes is an opportunity for learning and to achieve the desired learning outcome on taste. Such relational aspects of a learning space illustrate that historical ways of being, and the areas and degrees of expertise contribute to affordances (or not) for learning.

However, the taste aspect aside, the requirements of the work, and the structuring of the learning compelled active participation, engagement in meaningful activities, and the integration of learning with everyday work practices that achieves membership and recognition in one's work culture, organisation and/or community. Mulcahy (2011) comments on participatory aspects of learning and its role in integrating the individual into a particular community or communities.

> 'Underscored by the currently popular participatory or situated perspective on learning (Lave & Wenger, 1991), explorations of how learning connects with work now tend to be made in terms of the concept of integrating the individual learner into the social participatory processes of a community of practice such as a workplace or a school community' (Mulcahy, 2011, p.205).

Communities operate within spaces and have within them and imposed upon them all the aspects of space discussed above, such as reflecting dominant discourses (or

questioning of these) and ways of knowing that are an inherent part of the mode of production and of a given vocation or profession, cultural norms and ways of relating to each other. Training and assessment produce and re-produce these 'relational' aspects of learning spaces. For example, during our observation of the cooks being taught the new menu items in the central kitchen, we noticed the overall mood to be friendly, and the learners were cooperative and highly supportive of each other. There was an easy camaraderie (rather than competition) where the learners helped each other out with the smaller tasks such as washing the utensils, laying out the plates, and wiping off the kitchen counter. There is collective effort to help/enable performance during assessment. Training and assessment take into account the participatory nature of professional cooking and the requirements in the outlets of stepping in to help, where the training session taps on the camaraderie amongst cooks and close supervision by Development Chefs during assessment.

Through their participation in the training session, cooks concretise their leadership role because they are now responsible for teaching their colleagues in the outlet kitchens what they have learned at the company's centralised training kitchen. Cooks also saw themselves as valued employees because they have been identified for training at company headquarters. Therefore, training and assessment enable those cooks who have been 'selected' for training to enhance their status and membership within their respective outlet kitchen, and it also signals their integration into the company at large. These cooks are now full-fledged members of the 'community' of valued cooks within the company.

The assessment processes met three different but intertwined purposes: first, assessment functioned to enable accountability and compliance with company regulations. The assessment 'report' is proof that a staff member has been trained, so if a customer complains this is a source of information to analyse what the source of the problem might be. Additionally,

> "it's also a deterrent for our operations and staff. The staff knows that somebody is watching so he/she jolly better be doing his/her job well, make sure that everything is properly done, this and that." (Charlie, Training Manager).

Second, assessment is envisaged to help or enable the cooks improve and/or become better in their job. Charlie the Training Manager expressed training and assessment to be developmental. He said, 'I always feel that once you train them, you assess them, (to me) assessment should be a build-up rather than a final sort of thing'. Third, Charlie highlighted issues about the 'loss' of know-how and investments made in learning/training when a trained staff leaves the company (this is an endemic issue within the F&B sector in Singapore). Faced with these challenges, he

surmised that the least training and assessment could do is to achieve its summative goals of testing and thereby making sure that the cooks are able to do their job. These purposes illustrate power relations within the learning spaces; they also illustrate Charlie's understanding of the purpose of assessment, what it is and how it should be conducted and who assesses. Here he seems to understand assessment as testing (not as judgement), that assessment takes place at the end, (i.e. assessment of learning). This is a common understanding of assessment. But interestingly Charlie, the training manager also very much understands assessment to be about performance – "making sure that the cooks are able to do their job". Not surprising then that although there was corrective feedback given to the cooks while they were preparing and cooking their dishes in the Development Kitchen, there was no sense of formative feedback and assessment (as in engaging in dialogue about what needed improving). Rather, the focus was on the summative assessment at the end of the day.

Understandings of learning and of assessment not only inform but contribute to the shaping of the spaces for learning. They inform actions and decisions about teaching strategies and techniques, roles of 'teacher' and learner, and the power relations between teacher and learner.

Learning spaces for fire fighter leaders (Rota Commanders)

This case highlights not only the relational features of learning spaces as discussed in the F&B case, but also the temporal aspect of learning spaces, the role of tools and like the cooks, but more so, the ways of being that constitute learning spaces for these Rota Commanders in training.

In Singapore, the Civil Defence Academy under the Singapore Civil Defence Force (SCDF) conducts all professional and specialised training in the field of civil defence including disaster management, fire-fighting, urban search and rescue, detection and mitigation of hazardous materials and pre-hospital medical care operations. This is notable when we consider learning spaces, as the cultural norms and ways of being are of the Armed Forces, evident even in the term used to describe the learners – Officer Cadets. Officer Cadets are also inculcated as leaders formally through events like the Commissioning Parade and Oath Taking Ceremony. Events such as these are part of a ritual of participation and acceptance into a community of practice, which constitute another aspect of the learning space.

This 28-week program is divided into three phases: General, Professional and Command terms. Over the course and into their work as fire-fighters, a system of dispositions is developed and ways of thinking (Desmond, 2006) about danger such

as running into a fire instead of away from it. Organisations like the Civil Defence Academy (CDA) builds, develops and conditions these dispositions by putting trainees through 'realistic training scenarios' using simulators like Liquid Petroleum Gas bullet tank fire simulator, oil tank fire simulator and high-rise building fire simulator affectionately called the 'Furnace'. These simulated spaces are important for introducing and developing Officer Cadets' to the doctrines and strategies of fire-fighting in ways that would be realistic and meaningful yet also provide a safer and controlled environment for learning. The dispositions and ways of thinking for an Officer Cadet in becoming a Rota Commander include leadership. Leadership is a fundamental aspect of a Rota Commander and it is inculcated throughout the Rota Commander program but also developed and taught more specifically as a job role and function in subjects such as 'Command and Control', which is further honed and assessed in 'Scenario Packages' and 'Command and Control Assessment' where field exercises are conducted in the simulators. To be a competent Rota Commander includes having the ability to read the ground well; to know what is happening at all times and be in control of the scene; to be able to make the right decisions promptly, and to persevere under duress and/or in extreme physical conditions. All these are perhaps better expressed in action and better understood in the future as the Officer Cadets grow into their role as Rota Commanders of the Singapore Civil Defence Force (SCDF). In the 28-week program, the Officer Cadets are taught fundamental skills, knowledge and strategies of fire-fighting; they familiarise themselves with the use of equipment and gain some exposure to the work of a Rota Commander during field exercises, and are enculturated into the officer corps of the SCDF. It is understood that the program prepares them for learning to become a Rota Commander upon graduation and placement. That is, the course provides preparation for undertaking this role but it is understood that it is only through experience that the Officer Cadets truly learn to become a Rota Commander. The Academy then is just one (but with multiple different learning spaces within it) of a series of learning spaces and events that the Rota Commanders would experience over time.

'Becoming' a Rota Commander for the Officer Cadets involves experiencing multiple learning spaces of classroom, fitness regimes and field exercises in different kinds of physical spaces and emergency situations like high-rise building fire, marine fire, chemical incident, traffic accident and so on. Rota Commanders are expected to lead their fire-fighters into these situations hence leadership is an important aspect of their training and work. Leadership is very much embodied; the journey to what it looks like, feels like, is developed over multiple simulated experiences in the Academy and this development continues well into their placement upon completion of the course and indeed over their careers. What we have observed during the field exercises and based on interviews with instructors

and assessors is how aspects like leadership are not so easily distinguishable, and how the real essence or doctrine of leadership is expressed in action, and learned through demonstration.

> "We [instructors and assessors] are driven by the final outcome which is to save lives. So there are times where I have to decide whether to carry the casualty out first or fight the fire. Because when I bring the casualty out, the fire is going to continue burning and grow bigger. So how do I balance these two decisions, and how far should I evacuate the casualty? So you need to be able to balance, and like I said it depends on the situation. The situation may be different but have you really seen that situation as it is – to understand the situation before you talk about deploying the men? So, these are skills that the Officer Cadets must have which they must demonstrate in every situation. The 'Appreciation of Situation' is fundamental to being a Rota Commander or a leader in the organization. It's a matter of fact so to speak – you have to. So, as a Rota Commander you must be able to justify your actions and we want the Officer Cadets to be able to do that." (MAJ Tom, Assessor).

Singapore is a highly urbanised and built-up city with a high population density. This geography of Singapore thus becomes part of the learning space for the structuring of the learning evident in 'High-Rise Fire' module being one of the most important modules in the Rota Commander program and it deeply permeates fire-fighting strategies. The module 'High-rise Fire' deals with fire incidences in 'High-Rise Building' (HRB), and 'Super High-Rise Residential Building' (SHRB). Due to the height of these buildings which are beyond the reach of aerial and external fire-fighting approaches, the doctrine for fire-fighting in HRB and SHRB is typically limited to a strategy of 'internal fire-fighting' where fire-fighters must advance floor-by-floor through the heat and smoke to extinguish the fire. In this module, the Officer Cadets learn about High Rise Building/Super High Rise Building fire-fighting strategies and tactics. They engage in classroom learning, drills, and practice in simulation exercises at the 'Furnace'. In fire-fighting strategies and tactics, there are other more implicit qualities of performance that are essential which involves optimal utilisation of resources and manpower deployment, an alertness or situational awareness of the environment and knowledge of building/infrastructure systems.

It is evident that the learning space constitutes not only the physical space and its structures and arrangements, but the tools of fire-fighting strategies and 'tactics', ways of thinking about fires, dispositions, deployment of fire-fighters and how to track and manage them in addition to systems, and understanding the components

and structures of buildings. There is a lot to learn about being in these spaces and doing the work that fire-fighters undertake in such spaces. However all this is but part of the space. In addition the Officer Cadets learn not just about the nuances of the work but they also "learn how to learn" from their instructors and assessors:

> "The same guiding principle will guide you to do another job not because I tell you to but because you have the principle and guideline. We are not trying to be prescriptive because it is not possible to cover all scenarios or situations, so we go into guidelines to guide what they should do as a Rota Commander. We can tell them but they still cannot prepare – like for example one of the requirements is the ability to think on their feet" (MAJ Tom, assessor).

Officer Cadets need to be able to identify and prioritise tasks, and judge what the optimal level of resource and manpower utilisation is needed. Course designers, co-ordinators and instructors are cognisant of how professional competencies like responsiveness, alertness, awareness and decisiveness (or what instructors such as LTA Uma call 'street smart' or savviness) that involve combinations of tasks or activities, modes of understanding, interpreting and communicating, could be developed only with time and experience. This is another aspect of a temporal dimension in which the course at the Academy features as a moment in a series of learning spaces over the career of the Officer Cadet and/or Rota Commander in the SCDF.

From the Rota Commander case study we can understand learning and work as spaces that can be considered as an 'assemblage' or 'amalgam of places, bodies, voices, skills, practices, technical devices, theories, social strategies and collective work that together constitute…knowledge/practice' (Mulcahy, 2011, p.207). But it is also more than an assemblage of these things; it is the relations between them. Those relations are mediated by the cultural norms of command and control, not only within the Armed and/or Civil Defence Forces but necessary within high-risk work that requires split second decision making where lives are at risk. The nature of the profession, the vocation contributes to the space of learning, mediating what is learned and how it is learnt.

Conclusion

We have used the two case studies discussed in this article to illustrate a) what constitutes learning spaces and b) to illustrate the potential of authentic and holistic learning and assessment that is conducted for, in and through work.

Learning spaces have a temporal aspect; they enable development of ways of "being" intrinsic to particular vocations and professions. Specifically learning spaces are inclusive of the practices within the space; the material things such as tools, the ways of thinking, the discourses, the doings, sayings and historicity of these practices, the individual biographies of those participating in the learning space. It is the relations between these aspects that are of particular interest in understanding what is happening. Additionally learning spaces interact with; indeed have embedded within them doings and sayings, discourses, affordances and constraints of the contexts which are also constituted by these dynamic interactions.

The Rota Commander story was illustrative of the temporal aspect of learning spaces, both cases made reference to ways of being for the vocation / profession that were evident in the interactions within the learning spaces. Indeed both stories illustrated that the body itself is a tool; for the cooks, taste as an aspect of the body, for the Rota Commanders, the senses used to 'read' the situation, the physical strength and dexterity required to use the equipment, so that correct use is like an extension of the body. Ways of being are integral to participating in and being accepted into a community of practice, as with the cooks being selected to learn and then teach others, the Rota Commanders participating in the ritual of the Commissioning Parade and Oath Taking Ceremony. But participation and acceptance is evident in much smaller ways, through for example feedback, not discussed here (see Bound, Chia & Karmel, 2016), and of course taking active part in, being agentic within the exercises and other learning activities. The biographies of individuals were illustrated in the discussion of the Development Chef's pedagogical experience and their reliance on the way in which they were taught. Being part of a form of production (the cooks) or part of a professional body and institution such as the Singapore Civil Defence Force mediated learning spaces. The relations between all of these aspects enable us to analyse what is happening through a selected lens. In this Article, it is the lens of learning and assessment with a particular focus on authenticity.

Authentic learning and assessment such as for the cooks and Rota Commanders materialises learning as social practice. Authentic tasks may be defined as having "real-world relevance and utility"; "appropriate levels of complexity", and be "generative" (Herrington, Oliver & Reeves, 2002, p.3). Authenticity takes on different forms, and happens in very different kinds of learning spaces reflective of the relevant ways of being; for the F&B menu-change, training draws upon the

resources of the professional kitchen and expertise of experienced chefs for summative-formative assessment, Officer Caders/learners in the Rota Commander course are engaged in a different but related form of real work through summative and formative simulation exercises. Authentic assessment refers to something more than its real-work setting and work/professional practice: actors particularly assessors, instructors and designers recognise the social dimensions of learning and assessment such as the mutually constitutive and dialogic nature of knowledge (Wells, 1999, p.75); collaborative aspect of work, and the holistic or "authentic wholeness" (Ross, 1999, p.154) of real work although assessment documentation and design often suggest otherwise (bound, Chia & Karmel, 2016). Authenticity occurs "not in the learner, the task, or the environment, but in the dynamic interactions among these various components…authenticity is manifest in the flow itself, and is not an objective feature of any one component in isolation" (Barb, Squire & Dueber 2000 in Herrington, Oliver & Reeves, 2002, p.2).

The importance of "dynamic interactions" and "integratedness" of task, environment/setting and the learner as defining characteristics of authenticity introduce and/or shift the framework of investigating, analysing and understanding authentic assessment towards teaching/learning concepts like "situated learning", "communities of practice" and "legitimate peripheral participation" (Lave & Wenger, 1991), which essentially theorise and authenticate learning as a social phenomenon. These concepts suggest a fundamental shift in focus towards the "nature and quality of the particular activities in which teachers and students participate together, and through which learning occurs" (Wells, 2000, p.75). Authentic assessment extends beyond "real work": it focuses on the quality of interactions that would enable learners' engagement; the dynamic interactions and integratedness between tasks, learners and the setting, and the application of concepts and skills, real world utility, complexity and generative-ness. All these suggest that authentic assessment enacts learning as social practice which takes into account factors like situatedness, community and participation. It is within the learning spaces that authentic assessment is enabled.

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Opening learning spaces for business interns – some insights derived from the PEARL project

Annette Ostendorf

Business internships in the context of Austrian colleges for higher vocational education (upper secondary level, ISCED 4a/5) are well established and linked to the curriculum. However, not much is known about the interns' learning contents and processes within such working-learning arrangements, particularly from the interns' perspectives. Therefore, in the PEARL project, learning in internships is investigated in a very specific way. The interns are involved as junior researchers playing an active role in collecting and interpreting data. They act – after some preparation by a researcher team at Innsbruck University – like auto-ethnographic researchers in their own internship and are interviewed afterwards. The qualitative study shows a variety of facets in the 'learning space business internship'. In this context, attention is also directed to a phenomenon which is described as 'opening the learning space'. The article ends with an 'opening tableau' showing the different tasks of schools, companies and the individual learners in this regard.

Keywords: opening learning spaces, business internship, workplace mentoring, connectivity

Business internships as a supplemental learning space in vocational fulltime schools

The initial hypothesis of the research project reported in this article is that business internships can be interpreted as learning spaces that can be used for individual competence development in a professional domain. The term 'learning space' in our work is based upon social constructivist learning theory. Learning is interpreted as an individual process mediated by tools and rooted in a social context. This understanding stems from the activity theory (Vygotsky 1978: 40), a perspective

that was further elaborated by Lave & Wenger (1991: 29) who interpreted learning as 'situated activity'. Stressed in this regard is also the relational feature of learning. 'This view also claims that learning, thinking, and knowing are relations among people in activity in, with, and arising from the socially and culturally structured world.' (Lave & Wenger 1991: 51)

Internships can be interpreted as a specific form of 'legitimate peripheral participation in a community of practice' (Ostendorf 2007). This also clarifies that these learning spaces cannot be seen as static containers. They are constructed in reflection and action, which learners develop and use simultaneously. Learning spaces emerge as a relational phenomenon constituted by persons, contents, tools (including language), organisational structures and cultural patterns. They are spaces for experiences and reflection is required to construct competencies (Wittwer & Dittrich 2015: 20, see also Kersh & Evans in this paper collection).

The PEARL project ('interns investigate their working and learning')[8] focuses on the facets of this learning space established to deepen the pupils' work-related experiences and their vocational competence development.

Internships can be characterised in different dimensions and the term 'internship' is multi-faceted in its use and meaning. Maertz, Stoeberl and Marks (2014: 125) worked out 11 key dimensions in this regard. The following table shows the dimensions and the specific features of the PEARL internships. Business internships are part of the curriculum of all higher and medium vocational schools at the secondary level in Austria.

[8] PEARL (in German: **P**raktikanten/innen **e**rforschen ihr **Ar**beiten und **L**ernen) is funded by the Austrian Ministry of Economics, Research and Science within the Sparkling Science program from 2015–2017 and is conducted by the business education unit at the University of Innsbruck, Austria. For details see https://www.uibk.ac.at/projects/pearl/projektbeschreibung.html.en

Dimension	PEARL internship characteristics
Payment	Payed
Working hours	8–12 weeks, 40 hours per week, mostly during summer holidays partly overlapping with four weeks in school.
Institutional context	Internship are a part of the curriculum of colleges of higher vocational education (secondary level, 17–19 years old) Branches: tourism, trade/administration and technical
Evaluation modus	Marked by the school
Academic requirements	Low academic requirements, i.e. learning on-the-job and ad hoc instruction; specific in PEARL: logbooks.
Arrangement parties	Learners look for internship workplaces for themselves, only partly assisted by the school
Transparency of duties	The internship has to follow the very general regulations of the curriculum, i.e. related to specific branches and working tasks and legal requirements. No specific restrictions for employers besides legal frameworks (as youth protection law), in particular, no requirements concerning concrete working contents.
Work format	Usually job-based format, sometimes related to projects
Faculty sponsor/mentor	Part of the teachers' work, not regulated
Work sponsor/mentor	Usually official contact person and informal mentors at the workplace
Future employment aspects	No implications regarding following full-time employment but career orientation as a general goal

Table 1: PEARL Internship Characteristics

The empirical design of PEARL

The internships are investigated in PEARL from the interns' perspectives. A very specific feature in the PEARL project is that pupils get involved as co-researchers in the qualitative research study. They are not objects of research but partners in setting up the research plan, collecting data in their workplaces during work, and interpreting the first draft of the analysis. The working contexts of the interns vary, ranging from tourism, to administration, to technical placements.

In total, 59 pupils, approximately 17–19 year old, from two colleges of higher vocational education (grade IV, ISCED 5) were involved in four ways:

i. They received training in qualitative research methods in different workshops at school and university and made their own 'research plans' for their internships;

ii. They acted as auto-ethnographic junior researchers during their internships in summer 2015, documenting learning events, occasions and situations with the help of a prepared logbook. Students also took photos of persons and materials which, from their perspective, helped them learn. Thus, to some extent, the autophotography method (Kolb 2012) was used as an additional tool for investigation.

iii. In qualitative interviews, they explained their experiences and all the collected items; and, finally,
iv. Some pupils cross-validated our coding of the data, giving us feedback on our first interpretations.

In PEARL, each intern's internship learning experiences are regarded as a 'case', including data from the stimulated recall interview, the logbook, the photos and other materials.

The analysis follows the design of grounded theory in the pragmatic version of Strauss and Corbin (1996). It is not yet finished, but we made different rounds of coding, which included four researchers. In addition, we conducted a cross-validation after the first round of coding with the pupils of one partner school to see the level of interpretation conformity. The results show a high rate of consensus.

Facets of the 'learning space business internship'

In our first coding, we could identify at least three main facets of the learning space: the content-related, the social and the personal (Ostendorf 2016). For illustration purposes, some aspects of these facets are described in more detail below.

The content-related learning space facet

Interns see content-related learning, in particular 'new contents', as important but not in the foreground. Of course, they learn about new tools, products and procedures; however, in PEARL, the interns are already quite experienced in their vocations. The internship, therefore, is not their first practical work experience. Interestingly, in the gastronomic internships, the aesthetic dimension played a dominant role in the content-related learning space facet. Many photos collected as representative of the learning activities showed elegantly laid tables, nicely arranged buffets, and beautifully decorated dining areas or food. One problem in relation to content-related learning was that the interns' competencies were partly underestimated by the employers, particularly in internships in foreign countries. The employers did not know anything about the pupils' type of school and the quality of vocational learning there.

> "(…) particularly in the beginning when they do not know what you really can do. They think, you haven't been anywhere. So, on the first day, they tried to teach me how to carry plates (…)." (case 8:158)

However, especially in intercultural internships, unknown foods, beverages, service procedures, foreign languages and intercultural encounters with guests and colleagues formed a very rich learning space not only in content-related aspects but also in social dimensions. Also, special events, such as golf tournaments, weddings, and festivals, presented outstanding experiences to the interns.

The social learning space facet

Living in another place or even another country meant that the interns had to show the ability to self-organise and to learn how to communicate and interact with different colleagues and clients. Social interactions are a very important aspect of the learning space for the interns. Particularly in this regard, interns are also dependent on the learning environment and the opening of learning spaces. In administrative and technical internships, the processes of 'explaining', 'showing' and 'observing' were very important in relation to a more peripheral position in a

community of practice, whereas in gastronomic work experiences, the intern was often a full member of the community of practice and a part of the working team.

The personal learning space facet

Internships offer many opportunities to learn something about one's self, mental state, emotional stability and the ability to handle crises ('difficult' clients, conflicts with colleagues, etc.). Feedback processes play an important role in personal learning spaces. They provide reasons to reflect on the development of the self, career options and the work-life balance.

> "(…) but I was in an area which I liked very much and I also got the feedback of my mentor, that I have done this really well and show great motivation – and, yes, then I thought that I could do this also after finishing school because you don't really know what to do after school." (case 21: 97)

Opening the learning space

Whether the learning space is used or not depends on the interns themselves, but also on the opening of them by more experienced colleagues and groups. We found this 'opening phenomenon' in the empirical data in different forms. Learning happens also en passant, informally, implicitly, but it is often linked to experienced others and working conditions. In our empirical data, we could only analyse reflected learning, either in the logbook or in the interview or photo material. Meaning has to be given to it. Without reclaiming a philosophy of meaning (see, e.g., Speaks 2016), it should be stated that, in our context, giving meaning is bound to a constructivist view. This implies that 'meaning' is constructed by the individual learner in a motivated, active reflection process of concrete experiences.

To give something a meaning is the first step towards opening oneself to a new experience, of offering learning opportunities, and of supporting the learning process in different ways. The 'giving meaning' or 'opening' process can be activated by persons and institutional settings.

We will see that there is more than one dimension of opening the learning space, but in the beginning, we focus on the mentoring processes.

Opening dimension: Workplace mentoring

With a view on the current status of data analysis in the Sparkling Science PEARL Project, it becomes clear that one of the most fundamental push factors for fostering learning and development processes of interns is workplace mentoring. This reaffirms the findings of former theoretical and empirical research characterising the special role of formal and informal workplace facilitators (Billett 2001, 2004; Illeris 2011; Ostendorf 2012, 2014). Perhaps that is not very surprising, but there is not a lot of knowledge on the processes, practices and (organisational) structures of these facilitation phenomena. Additionally, even in research literature, the phenomenon of facilitation or supporting learning in the workplace is not stated clearly. Some very prominent terms for this phenomenon are mentoring or guidance, which are overlapping concepts. Our preference for the PEARL project is to use the term 'mentoring', because in business internships, competence development/identity building and career themes are linked, and both can be fostered in a more formal or informal way and encompass dyadic and multiple relationships. Guidance as a more knowledge-focused term is included in our definition of mentoring: Workplace mentoring can be defined as a process of facilitation and guidance, including knowledge transformation and social integration in teams and communities of practice. It is offered by experienced persons and addressed to novices or less experienced colleagues in the occupational field.

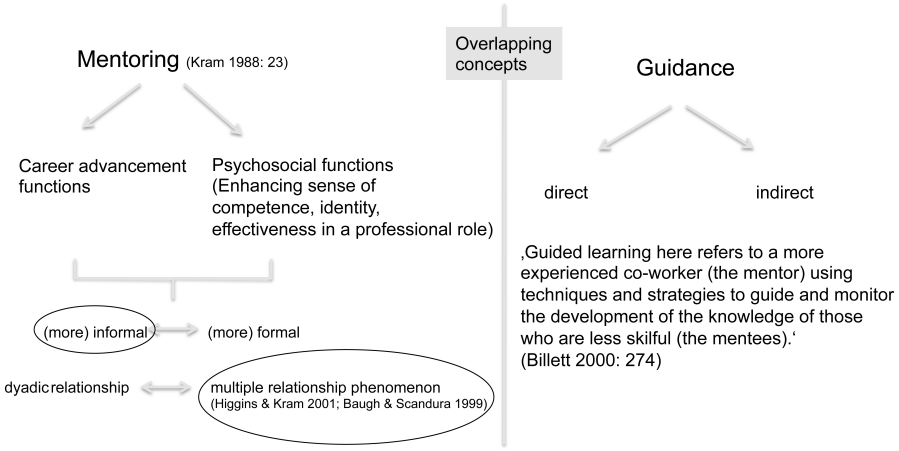

Figure 1: Mentoring and guidance.

PEARL results show a differentiated picture of workplace mentoring within internships that should be consolidated and may be further developed to other contexts of workplace mentoring to gain a more sophisticated theory of these processes.
To focus on the contribution of mentoring processes to the usage and development of learning spaces, we extracted some of our data and made a representative (related to all cases) sub-sample, which included six 'cases'.

Business context	**Overall impression rather positive**	**Overall impression rather negative**
Administration	case 21, m, SE	
Technical	case 50, m, LE	
Tourism Service	case 2, f, SE case 37, f, SE	case 38, f, SE
Tourism Cooking	case 13, m, SE, abroad	

Table 2: Sampling, LE = Large Enterprises (> 250 employees), SE = Small Enterprises (1–49 employees)

For this special analysis, the following was the leading research question:

How can we develop a deeper understanding of learning in business internships and the meaning of formal and informal mentoring processes

The interns reported different experiences with workplace mentoring in their internship. Many types of mentoring could be identified, including formal and informal, intensive or loosely coupled, changing or evolving, and as a one-person task or network bound.

In many cases, it became clear that internship mentoring is not only a task for a single person formally or informally assigned to supervise the novices at the workplace. Different persons in different settings are involved.

> "**They** explained everything to me and made sure that they only explained it and not that everyone just did something, so that I understood it better." (case 2, 84)

Some mentors are more engaged in knowledge transfer, others in caring, some are officially designated to look after the interns, and others do it informally at the workplace, near the workplace or in private settings. Thus, the phenomenon of internship mentoring is multifaceted and complex.

Therefore, the focus of research also has to be directed to the communities of practices (CoP) (Wenger 1998) and the network structures. CoP differ in kind and scope and are not expected to automatically welcome the newcomer. That would be too idealistic. However, a certain degree of the CoP's willingness to integrate the novice can be seen as a precondition for internships offering learning spaces.

> "I did have the feeling that I was now **part of a team** and definitely a different feeling than in previous internships." (case 17, 107)

In the cases, we saw different types of mentoring, some strongly protective, others with a high grade of laissez-faire. However, a minimum of protection is needed to discharge educational duties against young vulnerable people. This shows in the following quotation:

> "And so I had to be there at 12. Normally, work started at half past three, but there at 12 and even then until one or one thirty when I went home, and it was quite a shock to start with and I thought, you can't do that with an intern, but somehow it just didn't interest anybody." (case 38, 59)

The protection task of CoP at the workplace differs according to the age and experience of the intern. Still, all are newcomers and, in terms of power relations at the workplace, underprivileged. Displaying and explaining (besides the delegation of tasks) are given priority, especially within administrative and technical internships; in tourism internships, the integration in the team is given more weight.

Companies offering internships can support the usage of learning spaces at the workplace by carefully informing and establishing the mentoring infrastructure. This includes information about the type of school, curricula requirements and recognising the interns' previous knowledge. During the working phases, the companies have to offer to some extent caring and learning opportunities, and if possible, job rotation. They should be aware of their responsibility in the vocational education process and open themselves up for and take part in evaluations.

The data in PEARL show that workplace mentoring is a very important issue for opening the learning spaces in business internships. However, we also found other dimensions of opening the learning spaces and assuring quality in internship learning. Also, the delegating school and the intern herself/himself have to fulfil a kind of 'opening' to secure the usage of workplace learning spaces.

Opening dimension: The learner

The 'opening' of the individual learner herself/himself means that the learner should be able and willing to look for and reflect on new experiences. This can be supported by tools, such as logbooks (as used in PEARL for reflection and research purposes) or learning portfolios. (Dimai/Hautz 2016). The logbook helped the interns to give their experiences meaning.

> "(…) one is (using the logbook, A. O.) a little bit more reflective because we would not think about this now: have I learned something or so? (…) After this, one goes with other expectations into the internship, as you realise this as a learning process." (case 50, 672)

> "Actually, I must say that in writing down this and getting rid of my thoughts, putting them behind me (…), in some way I could deal with it better." (case 31, 488)

The PEARL logbook had a two-fold function – it was used as a documentation and reflection tool and it was research equipment. In giving the logbook the second function as a research tool, some of the students viewed the task of documenting and reflecting in a different way:

> "Therefore, I felt like a researcher, and by the way, we never had such a cool logbook before, where we could fix issues we realised, or something we were told was well done. And the mind-map – when we make our internship folder… the teacher never looked at it so intensively." (case 42: 646)

This spirit could perhaps be more intensively implemented also in the traditional usage of logbooks or similar tools.

Opening dimension: Tasks of the school

An appropriate collaborative preparation of reflecting tools in schools would be helpful. This was done in the case of PEARL by the researchers of Innsbruck University partly together with the interns (research plan), but this could also be done by teachers and pupils in school as preparatory work temporarily before the internship.

The interns were also asked as quasi-experts to explain whether and where the school could and should support the internship. An often-mentioned aspect was to set standards for quality and make information on former interns' experiences available for the next generation of interns.

The school has to show commitment to the internships. Its role in opening learning spaces is particularly important before and after the internship. During the working phase, they only have a peripheral role (motivation and, perhaps, support in emergencies). However, during the preparation phase, they can initiate the reflective attitude and motivation, prepare tools for reflection, and frame the quality of internships by defining selection standards for workplaces. In a connective way that covers the experiences of the two learning sites (school and the workplace), teachers can foster cross-border learning also after the internship. There should also be an openness concerning new knowledge derived from the internship experience, which could, perhaps, be used in classroom work or training workshops at school.

The 'opening tableau'

The differentiation between various dimensions should not conceal that the opening of the learning space business internship needs a connective perspective on workplace learning. All three dimensions are connected and, in conjunction, establish a network that enables competence development. As a theoretical framework, connectivity theory as elaborated by Griffith and Guile (2003) or Tynjälä (2010) may serve as a suitable theoretical background. Against this background, we set up the following 'opening tableau', showing different opening dimensions (including responsibilities) and phases (related to the internship). The opening of learning spaces refers to individual learners, schools and companies. All have different but connected tasks before, during and after the internship experience.

Phases of internship **Opening dimension**	**pre**	**during**	**post**
Individual learner	Careful selection of internship positions related to own learning interests. Preparing reflective tools (such as logbooks).	Continuously reflecting and documenting the learning experiences, special events, new insights	Comparing and sharing the reflections with peers and teachers
school	Preparing the logbooks/ portfolios/other tools together with the learners Counselling in the application phase Setting quality criteria	Infrastructure for special needs Motivate the individual learners to reflect	Combining work experiences with subject-related knowledge Being open to innovation coming from the workplaces
company	Organising and information of the 'network' Becoming informed about school curricula and requirements		Supporting school and interns by giving feedback

Table 3: The Opening Tableau of Internships as Learning Spaces

Outlook

In the PEARL project, we could gain insights into interns' learning from the perspective of the concerned learners. Involving them in the project also gave the interns transparency about what it means to do qualitative research in social science. They became familiar with tools and could be a part of the research process. We also recognised from the interview data that it was exactly this circumstance that made the PEARL internship very special for the students. However, we also have to mention that involving pupils – even if they are older ones – into research agendas is challenging. The differences in the living worlds of university researchers and pupils and the balancing act between scientific and everyday language as well as motivational aspects – particularly over many months – are not easily handled. A strong commitment by the teachers is essential, and a lot of translation processes must be organised. In our case, we could establish a very fruitful cooperation which brought advantages to all sides.

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Annette Ostendorf, Chompoonuh K. Permpoonwiwat (Eds.):
Workplaces as Learning Spaces – conceptual and empirical insights

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Workplaces as Learning Spaces: Increasing Productivity in Workplaces in Thailand

Areeya Rojvithee

This article[9] *reports on a strategy for increasing productivity of labour in the workplaces through an evaluation of learning and training methodology applied at selected workplaces in Thailand. A public-private partnership project initiated by the government allocated seed money to run the pilot project in various establishments including SMEs. With the cooperation of the private sector, a consultant team was allowed to access the company, analysing the process of work to find the weak points to improve, then organising suitable training courses for target employees in the workplaces. After the training the employees were expected to apply the new knowledge, skills and competencies to their work. The consultants' assessment of their work indicated that productivity was increasing. Furthermore it was seen as a good strategy to demonstrate the importance of workplace-based training for improving labour productivity and to encourage SMEs to continue to conduct the learning and training to increase productivity in their workplaces. The final results were seen as promising not only in reducing operational cost of establishments but also in potentially enhancing competitiveness of Thai industries as a whole in the world market. The strategy is discussed as an example of how national initiatives can aim to change the 'organizational space' that creates an organisation's capacity to use and produce skills, organise and reward work, in pursuit of productivity gains.*

Key words: productivity of labour, work-based training, SME, policy implementation

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Background

The success of each organisation depends on the quality of human resources working in that workplace. So, people are the core assets of the organisations whether they are big or small. According to this perspective, the ability, knowledge, competency and skills of human resource must be continuously sharpened or upgraded to keep up with new development of technologies, processes or systems of working and new strategies are sought to improve the productivity of workforces.

Nowadays, the issue of using the workplace as a learning centre has become increasingly important. Workplaces connected to the globalised economy have been transformed as new technologies, changing patterns of work, growth of the knowledge economy and the growing use of high performance work practices are transforming the ways in which work is organized (Ashton and Sung 2002). One of the major challenges for any country is to improve their productivity and competitiveness. A key strategy for achieving that goal is the promotion of workplace learning, in the context of lifelong learning, to ensure that workers' skills are constantly renewed and adapted, and to prepare them for a wide variety of potential jobs. Also the new ILO Human Resources Development Recommendation (2004) stresses the importance of Member States' promotion of the expansion of workplace learning and training. (ILO, 2004, P.4) Policy of the Thai Government

The Thai government has placed particular importance on the quality of human resources which can be spotted in various articles in the current 11th National Social and Economic Development Plan (2012-2016) as follows:

- Promoting Lifelong learning that involves a process of continuous study, skill development to enhance resilience in life and adaptation to global changes in the 21st century.
- Improve skills and capacity of the workforce to align with the production of goods and services to build a better economy. Creating Networks to produce and develop the labor force partners in parallel with international learning networks.
- Restructure the production system to a focus on knowledge, science and technology with high productivity by setting up the target to increase the Labour Productivity by at least 3 per cent per annum .
- Promoting SMEs by providing support on human resource skills that are relevant to business requirements. Improve the knowledge and skills of firms in production, marketing and IT, and promote the application of science and technology, local insight, innovation and good governance.

> Further, measures should be established to assist SMEs in gaining access to sources of finance.

The research by the World Bank showed that Thailand's competitiveness, as ranked by IMD and WEF in 2010, was 26th and 38th respectively, with little improvement during the course of the Tenth Plan. Low productivity has become a constraint on Thailand's competitiveness and its sustainable development. Also the study of the Thailand Productivity Institute in 2015 showed that the major obstacle for the foreign investment in Thailand was the skilled labour shortage and low labour productivity. Thailand Development Research Institution (TDRI) suggests that low productivity in many Thai workplaces is a threat to the international competitiveness of Thai industries which in turn will affect the Thai economy as a whole.

To solve this problem, the Thai government has issued a policy to increase the productivity of Thai employees in target industries. The government has assigned the Department of Skill Development, Ministry of Labour to be the core organisation to manage this project for 4 fiscal years (2013-2016). First the government allocated a budget to run the pilot project in a sector of the target industries for a period of 6 months in the year 2013 to assess the feasibility of the project. On the basis of satisfactory results, additional budgets were allocated in the next fiscal years with slight differences introduced into the Model of learning and training which will be explained.

This initiative is connected to a parallel decision of the Thai government, which issued a Cabinet Resolution on November 20, 2012 agreeing with the proposal of the National Wage Committee of Thailand to increase the National Minimum Wage to 300 Baht (7.5 Euro) per day per person for all employees in the country. The Cabinet Resolution came into effect on the 1st of January, 2013. This means that all employers including Small and Medium Enterprises (SMEs) have to bear the increase in their expenditure or operational cost to pay salary or remuneration to their employees. In order to be fair to the employers and to reduce their burden, the government has applied the concept of increasing productivity in the workplaces, with the aim that if productivity increases, the employers can reduce their operation costs in all aspects. They will eventually gain, not lose. So, the government's allocation of resources to start up the project "Increasing Productivity in the Workplaces" has charged the Department of Skill Development with working closely with the establishments, analysing their losses, their weak points and solving problems for the final end which is increasing productivity, becoming more profitable and willing to pay more salary to their employees. This is described as a 'win-win' situation.

This article focuses on the content of the project for the fiscal year of 2013-2015. As the Thai fiscal year started on the 1st of October to 30th of September of

each year, the current project of year 2016 is being implemented and the project does not yet have results for that period. The data and information in this article is based on the information provided by the DSD in the form of the project proposal, guide book for implementation and the report of project implementation.

Concept of Increasing Productivity

To increase productivity in the workplaces there are many strategies that have been identified.

In order to apply the right strategy the understanding of the concept of "productivity" is necessary. It is usually defined as the relation between the output (produced goods) and the input (consumed resources) in the manufacturing transformation process. Productivity is connected to the use and the availability of resources. Productivity is reduced if a company's resources are not properly used or lacking. Productivity is strongly linked to the creation of value. Thus high productivity is achieved when activities and resources in the manufacturing transformation process add value to the produced products. Furthermore, the opposite of productivity is represented by waste which must be eliminated in order to improve productivity (Tangen, 2002).

The definition of "productivity" in this article as used in the Handbook of the project means the ratio of the quantity of output to the quantity of the input in the production process. The inputs are labour (employees); raw materials; machine and money. Or we can say how much output we can gain from the capacity of production of 1 unit of the input. The measurement of the increasing productivity is the ratio of the outputs divided by the inputs: if the result is greater than 1 meaning that it is progressive productivity, but if the result is less than 1, it means a regressive productivity.

If the production process consists of various factors of inputs and output, the result is called the total factor of productivity.

Labour productivity is the amount of production of 1 person or 1 working hour.

Capital productivity is the amount of production of 1 financial cost.

Total factor productivity is the increasing of output due to other factors such as technology development; improving of management and improving of the quality of human resources in the workplaces.

There are many strategies for increasing productivity but this project is focusing on reducing loss or waste in the production process such as the remainder of the raw material and the processed material; time; electricity; money which cannot be brought back to reuse or recovered.. According to this perspective, waste in the production process means that performance that does not create value added to the products or services or give satisfaction to customers. The reduction of the cost can be achieved through various factors of production process such as labour cost or employees' wages, cost of raw material, cost of machine and tools, cost of production process and the administrative cost. Reducing cost does not mean to pay less money but it means to utilize the money as to the value of products and create satisfaction among customers.

Strategies for productivity gains have to be interpreted in context and according to the organizational space that creates or limits an organisation's capacity to use and produce skills, organise and reward work. The organisational space, according to Hefler and Markowitsch 2012, is characterised by institutionalised processses that are specific to the particular society. Since, in the organisational space, employees are rewarded for their productivity according to their adaptation to the organisation, workplace learning plays a crucial role. Where the organisation is itself confronted with the need to change its processes and practices, the organisational learning space has to be expanded by bringing in external resources to support training and development.

Process of the Project‘s Implementation

Department of Skill Development (DSD) has drafted the project proposal to request a budget from the Budget Bureau of the year 2013 when 12,000,000 THB (Twelve Million Thai Bath, c. 300,000 Euros) was allocated by the government to run this first pilot project.

Then DSD drafted the Term of Reference (TOR) to recruit a Consultant Companies to work for this project.

DSD's officials in charge for implementation of this project were trained to understand the objectives of the project, the meaning of productivity and how to improve, the selection of the consultant companies according to the public rules and regulations and to set up the key indicators to monitor and to evaluate the project.

DSD staffs have to work closely with the team of consultants who have to transfer knowledge and skills to the officials of DSD. The officials monitor closely the whole work process in each company with different problems and issues to solve. The final result of the project was to get the group of qualified staff of DSD

who has been trained both in theory and practices from the consultants to work for the Department in regular work to help establishments to survive any crisis.

Then DSD announced the objectives and content of the project to the private sectors or establishments willing to join the project to increase productivity in workplaces. If the private sectors wanted to join DSD, strong commitment from the management and employees of each establishment was needed to work closely with DSD' staff and the team of consultants.

The duration for DSD to work in each establishment was 6 months. This included first visit to discuss with the authority at administrative level to get the consent and the assignment to work in any section, listening to all problems, collecting information and analysing, then proposing the plan to improve productivity by designing the training courses both in theory and practices to train employees/ employers to achieve the goal.

After all preparation works were done, the training was ready to start in the assigned section in different contents and different styles of the courses. It was 2 way communications between the trainer and the trainees, mutual consultation to improve all the process of work to increase productively, to reduce waste and to minimize the operation cost.

There was assessment and evaluation of all trained employees/ administrative staff to be sure that they could adapt themselves to the improvement of the working process and could transfer knowledge and skills to their colleagues in other sections.

After implementing the new system for some time, the measurement has been done to see the result, to assess whether the system could reduce the waste and increase the productivity as in the standard that had been set.

Expected outcomes of the project were:

The increase in knowledge and skills among employees facilitated by the work of consultant team and the utilization of knowledge learnt in the real working situation were expected to reduce waste in the working process. The consequent improvement in labor productivity in establishments was expected to include loss reduction and the increase in value added and productivity.

The application of the methodology and strategy acquired from consultant team were to be used in other sections of the establishments. The trained officials of DSD themselves were expected to use their expanding knowledge and skills for productivity to continue their work to support establishments as their regular work

Summary of the Implementation

DSD started running the pilot project on Increasing Productivity in the Workplaces through the knowledge and skill development of employees in the year 2013 to study all the processes of work with the budget 12 million Baht. There were 18 establishments in 8 provinces in Central Region joining to work. The establishments found that they could reduce their waste; cost of energy and utility such as electric and water; operation cost by 192 Million Baht. The project has been modified and approved to continue in the next Fiscal Year.

In the year 2014, DSD received a greater budget. It included 75 million Baht (approximately 1.9.million Euros) to run the project including employing Consultant Companies to work in depth with 200 establishments in the 10 focused industries. The number of employees trained in the workplaces was 20,092 persons. The establishments could reduce all related costs and created value added by 1,682 million Baht per year. Also the 278 officials of DSD were trained to increase knowledge and skills in all processes to increase productivity in the workplaces from the Consultant Companies. These officials worked as coordinators and supervisors of the project for each area and establishment.

In the year 2015, DSD received 67,500,000 Baht from the government to implement this project by focusing on Small and Medium Enterprises (SMEs) with 50-200 employees in 19 business sectors. There were 260 establishments that joined the project. The results of the implementation were as follows:

Promoting Skill development among employees in the workplaces of the target establishments by improving the production process, reducing work duplication and loss, organizing the intensive learning and training courses for both hard and soft skills attended by at least 50% of the total amount of employees in each establishment joining this project, 16,796 employees having been trained to acquire multi- skills to work with potential to analyse and solve the problems occurring during working and cooperating with employers to improve all the process of work, creating good labour relations in the workplaces and creating the value added altogether 603 million Baht after the completion of the project.

DSD assigned officials in each Skill Development Institute and Center in each province to work closely with the team of consultants who are the knowledgeable in such field from the well- known universities in Thailand. The officials were transferring knowledge and skills both theory and practices from the consultants to achieve the objectives of the project. With this project DSD could get good Model of increasing productivity in the workplaces of Thai industries and got qualified officials to work.

DSD has established the Consulting Centre for Productivity in each province to:

(1) Give preliminary advice to establishments to improve the production process by applying the Up-Grading Training Courses that are available in DSD in various trades of training both hard and soft skills.

(2) Give technical advice to the establishments participating in this project in previous years to continue to improve productivity in other sectors within the establishments. If they require financial assistance, they can borrow money from the Skill Development Promotion Fund with 3% interest rate per year. This fund has been managed by DSD under the Skill Development Promotion Act 2002.

(3) The current year 2016, DSD received 67.5 million Baht to run this project. 260 SMEs in 20 business sectors with employees from 50-200 and 201 up are expecting to join. The target employees to be trained are 10,000. This year the project is in progress so no result to show.

The Main Contents of Training

After analysing and identifying the causes of problems, the consultants set up plans and curriculums to train the employees. The problems of each establishment were different so the strategies to solve those problems were differed between the various consultants and establishments. The courses of training might be hard skills to operate the machine and production process; to utilize the materials. Soft skills training included team working; problem solving; innovative thinking and leadership.. After the training, the new concept of work should be applied. Details of the model implemented and records that enabled comparisons of the results had to be kept to see whether it was improved or not. These were presented to the top management to show the result and they had to sign to accept the result that benefited them.

Some tools/ techniques that are typically used to improve productivity include quality control processes including Quality Control Circles (QCC), tools for improving orderliness (5S), daily steering, process improvement including work study/time study and continuous improvement and waste reduction.

The application of these tools/ techniques depends on the situations and problems that need to be solved or improved to increase productivity/ value added. These tools have their specific purposes. to improve the processes of production or processes of working. Most of the tools have been derived from the Toyota Production System (TPS), a recognized source of multi-purpose approaches for developing people in the global manufacturing environment.

The process of implementation in the SMEs involved groups of workers in the same unit brain storming on ideas with their supervisor, identifying possible activities in order to solve problems related with Quality Control in their unit. This process used a range of diagnostic and planning and problem-solving tools, selecting those most suitable to the case to be improved. For example, 'PDCA' focuses on the work process to get the work done smoothly and efficiently. Starting with careful planning (P) then work is continued to follow the plan or doing (D). After doing the work for some time checking (C) the process of work regularly is needed to improve and action (A) by setting up standard of work improvement is taken. Similarly, principles of problem solving by Quality Control Circles follow defined steps in clarifying, analyzing, taking action and preventing future occurrences. Waste in the production process is an important area for diagnosis of problems and action-taking, depending on the nature of work and problems. Sources of waste through overproduction, stock control; defects; excess processing; waiting time, motion and transportation can be identified in ways that are amenable to improvements.

From the above tools that the consultant selected for improving productivity in each unit, the curriculum was designed to be relevant to the specific target group. The consultants then carried out the training, with testing of employees' understanding, before implementing the new model of work and finally evaluating the result, whether improving or not. If no improvement, the consultants had to solve the problems on the spot to be sure that they fulfilled the objective. The DSD officials were witnessing and learning from all processes from the consultants and also supervised the implementation of the project according to the Terms of Reference (TOR). In order to know the result of learning and training in the workplaces, in-depth interviews were conducted with key informants in each target workplace on how the model and methodology were implemented and how far the training and other forms of learning were contributing to increases in productivity.

Discussion of results to date

This initiative can be considered as an example of the organisational spaces of SMEs have been expanded to become particular kinds of learning spaces, by the strategic use of consultants backed by a national governmental policy. Where the results of the of the research came out positively, employees learned new hard and soft skills and effectively applied them in their daily working life. Employers were satisfied with the reduction of the operation cost. They gained new qualified employees with productivity increasing. Employers realized the benefit of training so they wanted to extend the training to other sections in their workplaces at their

own cost. Considering roughly in financial terms the amount of government investment, the benefits can be seen as in the Table 1:

Year	Amount of Budget Allocated (Thai Baht)	Value Added Gain per year Million Thai Baht	Number of establishments that joined/ Number of trained employees in this project.
2013	12,000,000	192,000,000	18 / NA.
2014	75,000,000	1,682,000,000	200 /20,092 persons
2015	67,500,000	1,206,000,000	260 /16,796 persons
2016	67,500,000	------	260 / 10,000

Table 1: Budget Allocated, Value Added and Numbers Reached

The figures above have been calculated by the consultant team after completing the project each year and were used to justify requesting budget for the following year. The project covered only some establishments that joined the project. The total number of establishments in Thailand is 359,853 and total employees are 8,634,825 persons. (Ministry of Labour, 2016).

The qualifications and experiences of the consultant teams have been shown to be important for the success of the project. Usually the consultants had academic backgrounds and experiences that enabled them to analyse the causes of the problems and to know how to tackle and to solve them. Solving the problems needs to deal with people on the spot as they are core actors so their attitude and cooperation is necessary for success. Above all, the top management of each establishment has to take responsibility and they play a vital role to support the process. They are those who gain the benefit of the result.

It is instructive to consider these observations in the light of experiences in working with the these kinds of tools and approaches in contrasted European contexts. Parallel research undertaken in Sweden has studies two national programmes for implementating lean approaches, the first an industrial programme formed to implement approaches based on an interpretation of Toyota's way of managing its operations in 60 medium –sized manufacturing companies, the second programme focused on public authorities (Eklund et al, 2015) . As in the Thai case, the findings, based on documentary analysis, interviews and questionnaies, showed considerable variation in how the methodology was interpreted and implemented. A similar range of tools to the Thai case was adopted, ranging from organizational tools (focusing on the organization of work and work-flow) to technical/economic (focusing on cost-cutting) tools. In some of the organizations, reflecting Swedish socio-technical traditions, implementation was accompanied by a drive to develop a high-participation as well as high-performance workplace, with a pronounced focus

on improving working conditions. As in the Thai case, the active ownership of top management and politicians was important for the introrduction of the change, and also for its sustainability. An interesting observation from the Swedish cases, which has yet to be tested in the ongoing Thai programme, was that in organizations where the emphasis was on technical/economic tools rather than organizational tools, many Swedish employees considered the working environment to have deteriorated and the changes to be unsustainable. In particular, more repetitive work and less mentally stimulating tasks arising from the use of some of these tools proved counter-productive and led some companies to introduce job rotation to offset some of the negative effects on employees' capabilities. There was also reluctance of some managers to 'open up' their efforts to criticism. By contrast, the use of organisational tools, when combined with a participative approach, appeared more likely to generate sustainable change. The comparison of findings from the Thai and Swedish programme is the kind of activity that the ASEM Research Network can usefully learn from, keeping the contrasting traditions and societal contexts in view.

Conclusion

The evaluation indicates how changes to the organisational space have expanded the learning space in Thai SMEs industries, in particular directions. The Thai policy implementation reported in this article has indicated how productive gains can be achieved and identifies some of the factors that have been important in achieving those changes. In particular, the use of consultants to bring diagnostic experience and methodological expertise into the establishments as a basis for planning change and designing tailor-made workplace training linked that change. The specific organizational spaces in this example appear to have been both expanded to incorporate a wider range of learning activities, and transcended by the strategy of training a cadre of consultants who can operate in their industry sectors and have their own trajectory of development as 'industry educators'.

As the ASEM Research Network Coordinator (Evans, in this volume) has noted, the work is ongoing and unanswered questions are how sustainable this approach can be. From the learning spaces perspective, how the employees' experience these changes, beyond the promise of wage increases, is a matter requiring further research and analysis, with much scope for Asia-Europe comparisons.

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Contributors List

Helen Bound, Institute for Adult Learning, Singapore

Helen is a Principle Research Fellow at the Institute for Adult Learning, Singapore (IAL) and heads the research Centre for Work and Learning (CWL) at IAL. Her research interests include learning in and across different environments, pedagogical innovations, the mediation of context, and collaborative activity. One of her more recent publications (with Peter Rushbrook) is: Towards a new understanding of workplace learning: The context of Singapore.

Daiva Bukantaitė, Vytautas Magnus University, Lithuania

Daiva Bukantaitė is an Associate Professor in Music theory and pedagogy department and Vice dean for studies at Music Academy Vytautas Magnus university. She received her Ph.D. in Education from the same university, specializing in learning network organizations. Her research interests are in workplace learning, arrangement for music educators and music performers, emotions in organization and education management.

Arthur Chia, Institute for Adult Learning, Singapore

Arthur Chia is a Senior Research Officer at Institute for Adult Learning, Singapore. His research interests are in the social and human sciences related to work and learning. He is currently working on a research project on assessment and learning for work.

Karen Evans, UCL Institute of Education, UK

Professor Karen Evans is currently Coordinator of the ASEM Lifelong Learning Hub Research Network on Workplace Learning. She is Emeritus Professor of Education at the UCL Institute of Education, University of London and Honorary Professor in the Economic and Social Research Council LLAKES Centre for Learning and Life Chances. She is also Honorary Professor at RMIT University, Australia. She was previously Head of the School of Lifelong Education and International Development in UCL Institute of Education and

then research professor, with a research interests in life and work transitions, and learning in and through the workplace. She has directed major studies of learning and work in Britain and internationally. Books include Youth and Work Transitions in Changing Social Landscapes (2013), The Sage Handbook of Workplace Learning (2011); Improving Literacy at Work (2011); Learning, Work and Social Responsibility (2009); Improving Workplace Learning (2006); She is joint editor of the Second International Handbook of Lifelong Learning, 2012 and Fellow of the Academy of Social Sciences.

Natasha Kersh, UCL Institute of Education, UK

Dr Natasha Kersh is researcher at the Department of Education, Policy and Society, UCL Institute of Education, University of London. Her research interests and publications relate to the study of workplace learning in the UK and international contexts as well as comparative education, lifelong learning, VET and adult learning She undertook her DPhil degree research at the Department of Educational Studies, Oxford University through Soros/FCO scholarship and an EU-funded grant (1996-2001). Since Natasha joined the Institute of Education in 2002, she worked on and directed a number of national and international projects such as EU funded projects (e.g. Horizon 2020 and Tempus) and UK-based ESRC (Economic and Social Science Research Council) funded initiatives. Reports and papers prepared as part of her research activities contribute to the international research development in the area of vocational education and lifelong learning. Natasha's research involves active international collaborations. She is currently a member the ASEM Lifelong Learning Hub Research Network on Workplace Learning.

Katharina Lunardon, University of Innsbruck, Austria

Katharina Lunardon is Assistant Professor at the Institute for Educational Sciences, University of Innsbruck, Austria. She has worked as anchor person for the ASEM LLL RN2 network at the University of Innsbruck's Research Centre Education – Generation – Life-course from 2008. Her interest's focus on urban learning spaces, transitions from educational institutions to working life and vice-versa, and on the links between teaching and research as a means of strengthening the links between students' interests and the realities of universities as organizations.

Elina Maslo, Danish School of Education, Aarhus University, Senior Researcher, University of Latvia

Elina Maslo is teacher and researcher interested in topics as the interconnection of language and learning in different learning processes, learning and teaching of languages, learning processes at work and the nature of learning space. She conducted her PhD project at the Institute for Pedagogy and Psychology at the University of Latvia (2003). After almost 10 years in the field of learning languages in and outside the formal educational system, exploring successful learning spaces in practise, she is now devoting herself to discovering and theorizing transformative dimensions of learning spaces. Her main research interest are learning spaces as multiple, diverse, changing, fluid, complex, always in construction – in and outside the school, and at the workplace. She is an active member and European co-coordinator of the ASEM LLL Hub research network on workplace learning.

Annette Ostendorf, University of Innsbruck, Austria

Annette Ostendorf has held the chair for business education at the University of Innsbruck's School of Management since 2006. From 1989 to 2005, she was Assistant Professor at the University of Munich School of Management in Germany, where she completed her Habilitation thesis on knowledge management discourse. Her current research interests are related to workplace learning, cross-border learning, development of vocational competences, post-structuralist educational theory, textbook research. Her teaching experiences include seminars and lectures in vocational and business education theory and research, management of educational organisations, human resource development and intercultural learning.

Pier Paolo Pasqualoni, University of Applied Sciences Tyrol, Austria

Pier Paolo Pasqualoni is a tenured Researcher and Lecturer at the University of Applied Sciences in Innsbruck. Beyond being a member of the ASEM-LLL Research Network on Workplace Learning, he is specialising in occupational science, adult and higher education. He carried out research across a wide range of topics, including social movements, mobility and migration. While regularly leaving his workplace to teach at a number of universities abroad (Free University Bolzano, Italy; Ramkhamhaeng University and National Institute of Development Administration, Thailand; National Chung Cheng University and National Chung Hsing University, Taiwan), he continues to offer courses on

Chompoonuh K. Permpoonwiwat, Srinakharinwirot University, Thailand

Chompoonuh K. Permpoonwiwat is an Associate Professor in Economics at School of Economics and Public Policy, Srinakharinwirot University, Bangkok. She received her Ph.D. in Economics from the University of Utah (USA) specializing in public economics, economics of gender and development, and quantitative methods. Her research interests are in public policy analysis related to local public finance, transportation, human resource development, and natural resource and environmental issues. She has been also appointed to be one of the management committees among other leading economists in Thailand for the Program in the Advanced Certificate Course in Public Economics Management for Executives at the King Prajadhipok's Institute.

Padma Ramsamy-Prat, Centre de Recherche sur la Formation (CRF) Paris, France

Padma Ramsamy-Prat is researcher at CRF-Conservatoire National des Arts et Métiers where she received her Ph. D in Adult Education. She is a lecturer in management and interpersonal communication in Masters' programmes at the Université de Cergy Pontoise. Her research interests imply work analysis in service-oriented professions; inter personal communication, gestures and professionalization. She has been qualified by la ComUE (Communauté d'Universités et d'Etablissements).

Areeya Rojvithee, Thailand

Areeya Rojvithee was a founding member of the ASEM-LLL Advisory Board and has been an active member of its workplace learning research network since its inception. She holds B.A. on Political Sciences (Second Class Honours) from Thammasat University, an M.P.A. from Chulalongkorn University in Bangkok and a Diploma in Social Planning from the London School of Economics and Political Science (UK), also got German Scholarship on Skill Development Management and Training. Her experiences worked with various projects of the ILO, the Asian Development Bank and the Ministry of Labour, Thailand. Now works as Freelance Consultant on HRD, Migration, Labour Affairs, Gender and Skill Development; also she got invited to be the External Lecturer teaching at the School of Economics and Public Policy, Srinakarinwirot University in Bangkok.

Theo van Dellen, University of Groningen, The Netherlands

Assistant Professor Theo van Dellen, Developmental and behavioral disorders in education and care: assessment and intervention, Department of Pedagogics and Educational Sciences, University of Groningen, The Netherlands

He is responsible for the topic "Transformative (lifelong) learning in workplaces" within the Lifelong learning program. Theo strives for an integral, interdisciplinary approach of developing theory and practice which supports adult learning processes for work through subjectivity, identity construction and transformation. The outcome in terms of theory may serve to understand the affective, cognitive and social characteristics of spaces which promote learning for work. His engagement with the complex and messy realities around workplaces is supported by humanistic and positivistic psychology. In addition, he calls himself to be a sceptical empiricist.

Döndü Yurtmaz, The Netherlands

Döndü Yurtmaz is a Master of Science with a specialization in Educational Policy and Management. Momentary she works as a teacher in primary education. In 2016 she obtained her Master of Science title. She is interested in the age period in which teachers find themselves and the workload they experience. She is finalizing her second Master in Educational Sciences, Specialization Lifelong Learning. Her main interest is the professionalization of teachers in their daily workplace. In her research the following topics are discussed: informal learning in the workplace, workplace learning, work and learning spaces, adult's learning experiences in the learning spaces, learning and awareness, learning outcomes in different contexts in learning spaces, and personal ties with the various workplaces as learning spaces.

This volume is focused on workplaces as learning spaces. It is the fourth volume of Asian and European researchers carrying out common or related work in the field of workplace learning. They are organised in the ASEM Lifelong Learning research network, which was established in 2005 and includes members from 14 countries in Asia and Europe. The research network is enhancing a vivid exchange of knowledge and ideas on workplace learning across different countries, cultures and continents and it conducts research agreed on common concepts. The contributions in this volume comprise in many cases empirical data gained by combining different qualitative research methods, including visual methods. The work of all researchers and research teams in this paper collection is dedicated to throw light on the phenomenon of workplaces as learning spaces, and to explain different facets of meaning, processes and structure related to it.

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