New Models of Digital Production
Issues of Autonomy, Immaterial Expertise and Learning

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Keynotes

## Apprenticeship as a model of learning for 'professions': what could it really mean?

Apprenticeship is usually considered as a model of learning for intermediate occupations and trades, and associated with national vocational education and training systems. In this talk I outline some of the reasons why features of apprenticeship also support the formation of professional expertise. The 'turn' to apprenticeship is helpful as it invites us to consider the relationship between, workplace practices, work organisation and learning and how these provide more or less expansive conditions and arrangements for learning and development. I argue that a more radical approach to apprenticeship and learning environments for professional expertise would foster and facilitate service innovation.

Alison Fuller
UCL Institute of Education

Learning and decision making in a post truth era

25 years ago columnist Steve Tesich coined the term "post truth" in an essay called "A Government of Lies". Eventually this has led to the declaration of a "post truth era", elaborated in a book by Ralph Keyes in 2004. The basic idea is a fundamental shift in the individual's and the public's approach towards truth. Rather than expecting authorities to say the truth, and condemning liars, there is a tendency to reward those who use exaggerations, fakes and even bland lies to shield the public from discomforting truths. If that holds true, the consequences for companies are obviously disastrous. Instead of telling colleagues, superiors or employees the truth, they are calmed with "pretty lies" until the real world consequences can no longer be covered and the misfortune takes its course.
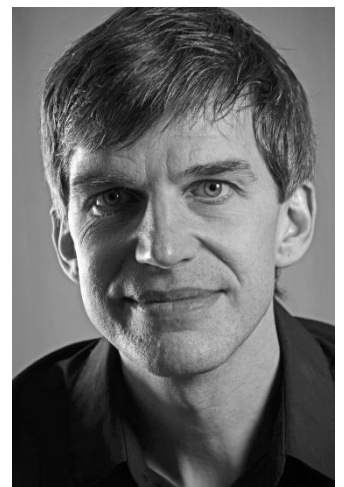
Henning Pätzold
Koblenz University

This could be regarded as a general management (and societal) challenge. However, managing means decision making and decisions in a complex world deeply depend on learning. Learning, again, is deeply rooted in viable concepts of the world. Thus the post truth condition is a serious threat to organisational learning and decision making alike.

This presentation intends to analyse possible consequences of the post truth condition for learning and decision making and to explore possible counter measures from the perspective of adult education, organisational education and VET.

Workshop 3

Adourian, Armig

University of Toronto, Canada

Keywords: identity, dialogue, emotion, agency, relationship, "whole self"

Bringing "Your Whole Self" to an Enterprise: Conceptual Possibilities, Risks and Limits

In this paper I propose to explore the concept of bringing "your whole self" to work by examining various learning theories as they fit (or don't) into a potentially distinct conceptual framework I am developing called IDEA. The IDEA framework pre-supposes that the whole self at work spans the over-arching themes of an individual's identity, dialogue, emotion and agency in relation to their workplace. The thread that runs through each theme is the concept of relationship / being relational—both from an individual and organizational perspective. The framework will compare each IDEA element with corresponding for-profit workplace terminology used in North America—bringing together (often in juxtaposition) learning theory literature with business / management literature to uncover possibilities, risks and limits.

I will first set the overall framework in context by comparing it with the holistic / experiential approaches of Illeris (2003), Jarvis (2005), and Kolb (1984). I will also highlight the concepts of attention and inattention—and the importance of reflection.

I will then give equal weight to each aspect of the framework beginning with identity. I will consider how these components of learning theory—biographical / narrative / life history (Alheit 1994; Olesen 2007) and participation as understood through situated learning (Lave 1991)—contribute to the formation of our identity. To understand how this identity is (or is not) welcomed within the workplace, I will address the concepts of personal branding (Hogshead 2016) and presence (Cuddy 2015) based on business / management literature.

Next I will review the influence of mental models (Senge 1990), reflective conversation (Schön 1983), double-loop learning and inquiry over advocacy (Argyris 1978, 2010) on dialogue—and the impact these elements have on the workplace when it comes to decision-making (Isaacs 1999) and flow (Csikszentmihalyi 1990).

Then I will move from the learning theory of emotional labor (Hochschild 1983; Roth 2007; Dirkx 2008) to the business view of emotional intelligence (Goleman 1995), authenticity, and resilience / grit (Duckworth 2016).

Lastly, I will address agency from the perspective of the learning theory elements of workplace affordance and bounded agency (Billet 2011), expansive vs restrictive learning environments (Fuller and Unwin 2011), and expansive learning (Engeström 2001). These elements will be considered in light of business / management literature around motivation (Pink 2009), influence / persuasion (Cialdini 2006, 2016; Berger 2016), and being a rebel at work (Gino 2018).

I will conclude by reviewing contributions to the IDEA framework from both learning theory and business / management literature. I will begin to show that relationship / being relational undergirds this potentially distinct conceptual framework. Even as it mentions learning theory and business / management literature for future exploration, the paper will suggest that the IDEA framework can be used to begin the conversation around being balanced at work—not just about an individual being their "work self" but being their "self" no matter where they are or what they are doing.

Workshop 7

Annen, Silvia

University of Toronto, Canada

Recruiting internationally-trained employees in Canada and Germany – insights from a mixed methods study

The overall aim of the presented project is to gain insights into how well immigrants can use their foreign qualifications and skills in the Canadian and German labour market, and how skills and qualifications affect their labour market outcomes.

The Canadian Society is characterised by a plurality of immigrants. Canadian migration policy and corresponding recognition approaches are strongly geared to economic criteria, as well as qualifications and skills (cf. Walker 2007; Guo/Shan 2013). Germany uses comparable criteria to steer its migration policy, although currently there is no points system regulating skilled migration as there is in Canada.

By using a mixed methods approach, the presented project aims to create an empirical basis regarding the situation of immigrants in the Canadian and German labour market. This analysis will help explain skill under-utilization and pay inequity, as well as contribute knowledge regarding the subjective perceptions of immigrants and representatives of employers responsible for recruiting.

This presentation triangulates the results of quantitative data analyses using PIAAC data, with the results of twelve qualitative case studies conducted in Canadian and German enterprises. In the case studies, 24 employees with qualifications acquired outside of their country of employment, as well as 24 recruiters / hiring managers were interviewed to provide a multi-perspective analysis. The qualitative cases were used to:

• Identify the approaches and methods which employers use to make decisions regarding foreign qualification and skill recognition

• Investigate the considerations and reference points of these recognition and qualification decisions

• Examine the underlying reasons for the application of differing approaches and methods, as well as their relations to operational requirements

• Determine how immigrants present and document their foreign qualifications and competences to employers

• Investigate the selection and proposal of further qualification measures by employers and education providers to immigrants, and their underlying principles.

The theoretical concepts of signalling (Spence 1973) and screening (Stiglitz 1975) are used as reference points for the analysis of the case studies. Following a maximum variation sampling (Patton 2001) the case studies were conducted in the information and communication technology and health sectors, which vary in their degree of regulation, requirements for labour market access and their occupational requirements. However, both sectors are similar in that there is a high demand for qualified employees in both analysed countries.

The case studies provide a more detailed explanation for the quantitative results including sector specific and subjective rationales, which lead to the overall situation of immigrants in the labour market by considering the employer as well as the employee perspective. In doing so the case studies provide an empirical explanation regarding the relevance of information in the recognition of foreign qualifications and competences. Finally, the results provide insights regarding the explanatory power of the above theories regarding entrance into the labour market and the meaning of foreign educational credentials and work experience for immigrants.

Bell, Caroline Margaret

Rhodes University, South Africa

How up-skilling opportunities and practices enable learning in, through and for workplaces in the marine sector of South Africa: Exploring the material aspects within a critical realist framework.

South Africa is characterised by cultural and biological diversity which constitute a unique context in which to research learning in, and for, workplaces. Previous research conducted in the biodiversity sector has shown there is a clear need for well-thought out workplace skills plans within conservation and research organisations. This involves extending the existing human capacity of professionals who are already in the workplaces, i.e. up-skilling. The marine sector falls within the biodiversity sector and within this sector, there are multiple conservation challenges which require skilled and capable managers and scientists. This study investigated the up-skilling opportunities and practices available to these marine professionals with a focus on how individuals learn and exercise their agency within the socio-material realities of the marine scientific and management context. Both formal (e.g. course based) and informal up-skilling opportunities were taken into account as well as the generative mechanisms that shape and constitute these up-skilling opportunities and practices. This research was framed as a critical realist study, while the substantive theories used for analysis purposes were socio-materialism and practice theory. Critical realism is a socio-material theory itself, and thus Bhaskar's four-planar social being or Social Cube was included as a model for further interpretation and synthesis of the findings. Through semi-structured interviews, analysis of documents and peer-reviewed papers, and observations, data were gathered from nine case studies (marine conservation or research organisations) and the initial analysis included using the framework of practice architectures which outlined what opportunities were available to the marine professionals. Furthermore, a socio-material analysis offered a more nuanced view of the relational objects in the field. Agency played a crucial role in the workplace practices of the professionals and it was a cross-cutting theme in all discussions of the mechanisms. The generative mechanisms included: the politics of social transformation and knowledge as a driving force of up-skilling; the influence of individual disposition and passion or will; the importance of the socio-material realities and realistic expectations; and how relationality is critical for the marine sector.

What emerged from these mechanisms was how professional practices that occur in the everyday working lives of the marine professionals are an integral part of the learning process, while formal, certified opportunities are important for strengthening the field and building conservation competence in the country. Through offering more complex insights into the forms of learning and up-skilling, as well as a distinct methodological contribution, this research contributes to the transformation of the biodiversity sector in South Africa but is also relevant to workplace learning research in a broader context.

Bhutani Vij, Asmita

University of Toronto, Canada

Challenging the Neoliberal Agenda of Workplace Learning: Framework for a Pedagogy of Resistance

In this paper, I propose to discuss the role of workplace learning in producing and reproducing neoliberal-capitalist social relations. I begin with briefly tracing the literature on workplace learning that focuses on 'cognition, expertise and the individual' (Fenwick, 2008) for its relation to the ongoing neoliberal agenda of 'corporatization and individualization' (Harvey, 2005). A large part of the discussion establishes how workplaces perpetuate unequal power relations through the process of 'Permanent pedagogy' (Sallaz, 2014), that positions the employers as a source of empowerment and employees in a position of deficit (Coffield, 1999). The paper highlights how workplaces use these social relations to justify a continuous need to immerse employees in permanent learning 'activity' (Engeström,1990) to the extent that the oppression of the employees is normalized. The perpetual nature of this pedagogy exerts social control over the employees through direct activity of training to 'fulfil the escalating demands of employers and develop skills to cope with intensifying workloads' (Coffield, 1999, pp.488.) as well as through indirect activity of establishing cultural, social and political norms in a workplace that an employee must internalize. In both the activities though, the discourse suggests that the employability is a virtue of the individual abilities of the employee. The process of such permanent pedagogy places the teacher (the employer) and the learner (employee) at two ends of the spectrum of power and reduces the learning trajectory to binaries of empowerment and oppression.

The paper further outlines a framework for a pedagogy of resistance. I approach this kind of a pedagogy by situating 'intentional dialectics' (Sawchuk, 2017) of social being and individual consciousness within the framework. The approach centers the dialectic of socio material relations of mediation and participation on one hand, and, the individual consciousness on the other hand. Theoretically, it draws upon the Cultural Historical Activity Theory (CHAT) (Stetsenko, 2009) and Friere's notions of learning to resist oppression through collective consciousness. In bringing these two theories together, the framework revolves around three levels of activities in workplace pedagogy. a) At the level of social, cultural and political 'activity' and how this activity is organized through continuous training of skills and knowledge development of the individual b) At the level of consciousness, while determining how workplaces 'fossilize behaviour' (Vygotsky, 1978) to normalize daily oppression and using 'reflection' (Friere,1972) as a tool to recognize the illusive nature of permanent pedagogy and think of resistance against oppression. c) At the level of individual activity, to identifying one's potential in building collective consciousness through activities that contest hegemonic pedagogy and examining the role of the 'humanist revolutionary educator' (Friere,1972) in assisting these activities while mutually determining a Zone of Proximal Development (Vygotsky, 1987). Overall, the paper attempts to highlight the obscure social relations in the discourse of empowerment across major workplace learning

models and propose an anti-oppression pedagogy that furthers the tradition of Vygostky's Marxist inspired learning approach.

Workshop 9

Bivall[1], Ann-Charlotte; Gustavsson[1], Maria; Lindh Falk[2], Annika; Abrandt Dahlgren[3], Madeleine; Tillmar[4], Malin

[1]Linköping university, Department of Behavioural Sciences and Learning, Sweden; [2]Linköping university, Department of Social and Welfare Studies, Sweden; [3]Linköping university, Department of Medical and Health Sciences, Sweden; [4]Linnaeus university, Department of Organisation and Entrepreneurship, Sweden

Conditions for collaboration between healthcare education and healthcare providers organising for clinical placements

Currently, the healthcare sector is challenged by lack of trained staff, limited financial resources, implications of more advanced technical and medical equipment, a greater focus on patient centred care and so on. New forms of collaboration, ways of working and learning are thus called for to deal with changed conditions in healthcare practices and need to be reflected in the education of the future healthcare professionals. The aim of this paper is to explore conditions for collaboration between healthcare education and healthcare providers involved in organising clinical placements for students in healthcare educations. The research underpinning the paper is based on interviews with nine representatives from healthcare education and healthcare providers in Sweden holding a central position in organising students' clinical placements.

The findings show a number of difficulties and opportunities for collaboration between the educational institution and the healthcare organisations working with and developing clinical placements. The long-term planning was hampered by extended organizational decision processes and the interlinkage between the educational institution and the healthcare organisations affected the possibilities for collaboration. Staff reduction in the healthcare settings and logistical problems related to the placements of students complicated the collaboration between the educational institution and the healthcare organisations. The question of placement of students also seemed to be related to the fact that the need of supervision increased the workload within healthcare units. Engaged managers were seen as beneficial resources facilitating the organising of clinical placements. The clinical placements were seen as shaping the future competent employees and represented an important means for attracting students after their graduation.

The contribution of this paper lies in its input into ongoing discussions of the need to find alternative ways of organising and collaborating across organisational boundaries within healthcare and create sustainability in the system by preparing students for upcoming changes.

Bolton, Heidi

South African Qualifications Authority, South Africa

Assessing the Impact of a National Lifelong Learning System: Cultural Historical Activity Theory (CHAT) Perspective

South Africa established a National Qualifications Framework (NQF) after its transition to democracy in 1994. The South African NQF is a tool to redress past injustices in the system for education, training, development and work; enable access to it, and mobility and progression within it; and enhance its quality. It is a single national framework for learning achievements, designed to contribute to the personal development of learners, as well as the to the socio-economic development of the country. It aligns the parts of the system, with the South African Constitution. Lifelong Learning and learning-and-work pathways (articulation) are central principles, as evidenced in the NQF policy suite, which includes the NQF Level Descriptors, and policies for the Recognition of Prior Learning (RPL); Credit Accumulation and Transfer (CAT); assessment; registering qualifications, and recognising professional bodies and their professional designations. Formal, non-formal and informal learning are recognised; every workplace is meant to be a learning space; Lifelong Learning is understood holistically. These policies have been in place in their current form, for almost 10 years: a recent external NQF implementation evaluation showed that this policy implementation is embedded in the system to differing degrees.

The South African Qualifications Authority (SAQA) is mandated to oversee the implementation and further development of the NQF – and to conduct periodic studies of its impact on South African education, training, and employment. Perennial questions arise, as to how best to link the initiatives of the NQF partner organisations, to outcomes and impact 'on the ground', and which theoretical approaches would suit this work best. Cultural Historical Activity Theory (CHAT), with its categories of subject(s), objective(s), tools, rules, communities of practice, and divisions of labour, has proved useful in SAQA's two most recent NQF impact studies – those reported in 2015, and 2019 – for conceptualising the NQF system, and the research designs, methods, and sampling. This paper reflects on the '2017 NQF Impact Study' reported in 2019. It describes the way in which CHAT afforded the elaboration of particular NQF tools and communities of practice in the study, and consideration of the dimensions of historicity and voicing. It details further, how the realist approach to impact evaluations was utilised in attempts to understand the links between subject actions in the different interacting communities of practice, and the outcomes reported by different categories of NQF stakeholders across the board. The results of the 2017 NQF Impact Study – and the related National Articulation Baseline Study – showed the NQF stakeholders' awareness, understandings, uses, and emerging impacts of the NQF policies. The findings shed light on how stakeholders had implemented and experienced the policies and models, and some of the Lifelong Learning-related gains and challenges thus far. The emerging picture was rich in its heterogeneity, nuances, depth, and three-dimensionality; it provided clear pointers to

SAQA and the other NQF partners, for the consolidation and further developmental work needed.

Boud[1], David; Francisco[2], Susanne

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Keywords: workplace learning, informal learning, practice architectures, VET teachers

The practice architectures that enable and constrain learning in the in-between spaces of the workplace

This paper focuses on the learning that occurs in what has been termed the in-between spaces of the workplace. These are spaces that can be in-between in a range of ways: including between the personal and the professional and between work and home. Drawing on illustrations from a study into the workbased learning of novice Vocational Education and Training teachers, we identify arrangements in the in-between spaces of the workplace that support worker learning, and highlight the importance of the relational aspects of learning in these spaces. The cases presented here show that learning in such spaces can be valuable for supporting novice workers to learn how to go on in this place at this time. These spaces can provide novices with opportunities for interaction with more experienced colleagues in an informal way. Further, they allow for just-in-time questions to be asked, problems to be solved together with others, and stories to be shared.

Bound, Helen

Institute for Adult Learning Singapore, Singapore

Keywords: learning, non-permanent work, integrated practice, workforce development

Integrated practice for learning through and at work: The case for non-permanent workers

Be it courses and programs for pre-service or in-service purposes, it is not uncommon for educational institutions to separate out theory from practice, technical from generic, and position knowledge as static and divorced from, for example, problem identification and solving in everyday work practices. Despite the extensive research into work and learning that deeply questions the wisdom and usefulness of such pedagogical approaches, it is difficult to turn around deeply rooted historical practices. However, it is important that we change these institutionally embedded traditional practices. Such practices are divorced from the experience of work and industry, and privilege educator perspectives. A larger

perspective is required that enables a critical examination of both the privileging of education perspectives and a blind acceptance of learning in, at and through work.

In this paper I put forward the 'integrated practices' model that enables examination of how workers, specifically non-permanent workers' learning and development from many different perspectives, be it individual workers, educators, educational institutions, industry sectors or policy makers. The integrated practices model considers relations between an individual's disposition (as in their orientation to practice, not psychological traits), the contexts in which they work and their entrepreneurial, craft and learning to learn capabilities and how these mediate their work and career trajectories. We argue that the integrated practice model requires fundamentally new ways of preparation for work, challenging a front-end loading model of education systems. The model reflects individuals' working and learning experience and becomes a tool for institutional and national policy makers to rethink the relationship between work, education and employability. The model can also be used as a tool for discussion about assumed relations between work, education, employability and pedagogical practices be they in educational or work settings. Using the model as a starting point, the session will dedicate time to discuss new ways of organising workforce development that includes non-permanent workers, and how these new ways of organising workforce development contribute to sustainable configurations of learning.

The presentation is based on qualitative research conducted in Singapore (n=97 interviews with non- permanent workers) and published in Bound, H. Sadik, S. Evans, K. & Karmel, A. (2018). How non- permanent workers learning and develop: challenges and opportunities. London: Routledge

Bromfield, Sheldon Matthew

University of Toronto, Canada

Keywords: Learning; Skills; Skills-Extinction; Labour Process Theory; Flexible Work; Capital

Labouring Through Unused Skills: Reframing Sennett in the Labour Process Theory

In the knowledge economy, skills are a misnomer; they are quickly extinguished and ignited through the development of technology and the organization and reorganization of work. Skills, therefore, are subject to the needs of production/market and are transient. In service-based occupations, many skills are tacit and appear as matters of energetic, adaptive and positive dispositions, rather than actual competencies as such. Employers tend to consider service-oriented qualities as soft skills or social skills. Skills are subsumed within paid labour; the skills workers use and develop are predominantly determined by employers vis-à-vis the labour process. As a result, a worker can develop an existential conflict that is rooted in a domain where skills are a human possession but are determined as valuable by exogenous forces in a demand and supply labour market. Moreover, workers are often forced to make

crucial decisions regarding training and development when their skills are considered obsolete. Workers consistently upgrade skills in an effort to protect themselves against obsolescence. However, becoming overqualified can result in unused skills, as employers may not appropriate the full skills set of a worker or workers may encounter a skills-job mismatch. Existing skills that are unused can become lost, invisible and obsolete. An important point of departure for this paper is what Richard Sennett offers in his analysis of this process as skills extinction, which involves the usefulness of skills and their limited durability within contemporary capitalist society. Like a perishable commodity, arguably, some skills have shelf-life; albeit with indeterminate expiration dates. Skills extinction can result in alienation, exploitation, limited job fulfilment, precariousness, identity conflict, feelings of inadequacy and a tireless pursuit of knowledge acquisition and skills upgrading to remain relevant and employable. This paper explores these issues in problematizing the current landscape of the skills-economy. Combining Labour Process Theory (LPT) with Sennett's theorization of the accretion of experiences towards skills mastery, this paper focuses on the contested concept of skills formation and positions the deskilling/upskilling discourse against a more contemporary argument involving the ramifications of unused skills and the invisibilization of skills through to extinction. The paper also evaluates the role of government as a possible solution to the skills extinction predicament.

Workshop 14

Ying, Chia; Chen, Zan; Chia, Arthur; Bi, Xiaofang

Institute for Adult Learning Singapore, Singapore

Keywords: innovative learning, blended learning, professional development, training and adult education

Promoting Innovative Learning at the Workplace – a Singapore Story

In line with Singapore's nationwide digital journey, the Training and Adult Education (TAE) sector of Singapore has launched the Innovation Learning 2020 initiative to catalyse the adoption of technology in the TAE sector. This paper presents findings from three projects we have conducted on innovative learning and discusses how learning and innovation can be supported. We first present findings from the first nationwide survey of the TAE landscape on the current status of innovative learning. Our findings show that a good proportion of training providers and adult educators are adopting blended learning to respond to the changes and new demand in the TAE market. We then present a case of a blended learning course for workers from Maritime industry demonstrates how blended learning can be designed and conducted to provide seamless learning experience for learners to embrace the affordances of tech-enabled learning, workplace supervisions and face-to-face classroom interactions. Lastly, we discuss how innovation and learning can be enabled at the workplace and present a model to support innovative learning culture at the workplace

Chia, Ying; Sheng, Yee Zher

Institute for Adult Learning, Singapore

Keywords: Lifelong Learning

Developing a Lifelong Learning Framework and Measuring Lifelong Learning among Workers in Singapore

Current advancement in technology and rapid global developments have emphasised the importance of lifelong learning, and this is acknowledged by governments worldwide. Employers and workers need to realise that it is necessary to embark on continuous learning and upgrading of skills, to remain relevant in the workforce. In Singapore, the SkillsFuture movement was launched in 2015, making lifelong learning the central vehicle to reframe all learning activities, so that all citizens irrespective of their life stage can develop their careers as well as attain skills mastery in their chosen field. Although the significance of lifelong learning is widely acknowledged, there is no formal measurement framework in Singapore that allows for a systematic and evidence-based assessment of its current state and the tracking of its progress over time. To address this gap, this paper proposes a framework for measuring lifelong learning at the individual level. The framework emphasises a 'life-wide' approach to learning, noting that learning is more than just education attainment and workforce development, but is also about social integration and personal development. The framework also includes indicators on the use of technology in learning and on the motivational aspect of learning. Based on data collected from a large-scale national survey, this paper presents a series of baseline measures for lifelong learning among workers in Singapore.

Collin, Kaija Marjukka; Lemmetty, Soila; Keronen, Sara;

University of Jyväskylä, Finland

Keywords: self-organized organizations, self-directed learning, workplace learning, competence development, growth companies

Self-organized structure challenging employees' workplace learning in growth organizations

The trends of getting interested in search for less-hierarchical forms of organizing are various. Environments and customer needs are changing quickly and employees need to respond them. In knowledge-based work managers rarely have all the needed expertise to solve organizational problems. Further, the meaning of work itself has changed for millennials who

search for autonomy and good work environment. This is why interest in all kinds of self-organized structures (self-managed teams, participatory management and non-management and empowerment of employees) have recently increased (see e.g. Salovaara, 2016; Lee & Edmondson, 2017).

Although we have many practical examples of organizations with low hierarchies, we still lack of empirical research on how these loose structures challenge learning and competence development in practice in heterogeneous organizations. We also lack of information of how complex work is accomplished effectively, how individual employees experience the work, or how changing power relations are challenged in self-organized structures. Further, more research is needed on organizational problematic consequences of self-organized structures especially related to the size of the organization (Lee & Edmondson, 2017). Within this context also the interest in autonomous and self-directed learning (Ellinger, 2004; Knowles et al., 2013) is huge. There are many studies showing that manager support is a key influence on employees' motivation to learn and participation to development activities, but we know little about how work characteristics can facilitate of inhibit learning at work (Noe & Ellingson, 2017). Even less we know about the existing supportive managerial practices to enhance learning in the organizations without legitimated or titled leadership or leadership structures.

In this study, we aim to find out how self-organized organizational structure challenge employees' learning and competence development at work. In the ethnographic framework, 36 interviews were collected between 2015 and 2018 in two organizations that titled themselves as low hierarchical and self-organized in their structure. Interviews were analyzed with the help of data-driven content analysis (Hiesh & Shannon, 2005) that aimed to reveal the challenges of self-organized structure for workplace learning.

As preliminary findings we suggest that in organizations adoring self-organization and autonomy, expectations related to self-organization may transfer as cultural norms. If employees' competencies and learning needs are not in the offer, responsibility for development and learning remains largely for the employees' responsibility. These expectations, in turn, may result to pressures for individual workers to find autonomously their own ways of increasing their learning potential without knowing exactly what to develop. This in turn, may be a challenge for motivation, focus meaning of learning. As a result, nobody knows or takes responsibility for guiding knowledge development and learning, although in these circumstances support is needed even more than ever before. In the paper, we will discuss how everyday learning and development could be supported in self-organized growth organizations.

Costley, Carol; Garnett, Jonathan

Middlesex University, United Kingdom

HEIs and employers interacting to shape creative and useful learning opportunities

Current literature especially from Europe has shown a range of research reports and papers that demonstrate how involvement between HEIs and entrepreneurial agencies can bring about pedagogies appropriate for workplaces that involve academic and employer contributions and often also participation (Van de Mosselaer et al, 2017, European Commission, 2011).

We build on these ideas by use of a good practice case study of a partnership between an international construction company and a UK university. The partnership programme was made possible by the Recognition of Prior Learning (RPL) policy and work-based learning framework of the University. The construction company approached the university seeking accreditation for their Management Development Programme which met their developmental needs and so they did not want changes to be made to bring it into alignment with existing university management courses. A small team of university academics and staff development representatives from the construction company conducted a research and development review of the company's staff development requirements at university level (Bravenboer and Lester, 2016).

Key factors were identified when considering the implementation of a work-based Masters programme grounding it firmly in the organisational context and linking the programme outcomes to real business objectives:

1. Linking the elements of the degree to desired business objectives

2. Identification of knowledge needed to support staff intellectual development desired business objectives

3. Work with selected groups/individuals to make explicit knowledge/skill resources

4. Application of knowledge/skills to business objectives, including links to any relevant organizational processes eg projects, appraisal, performance management, training.

5. Review and evaluation of the work-based degree's intervention.

The jointly designed scheme had five main components which combined learning already produced and valued in the workplace in the form of training programmes and organisational competencies with the university work-integrated learning modules:

Programme Planning enabled participants to negotiate their work-based degree with the university and their employer in the form of a learning agreement.

The residential Management Development Programme.

Competency Development Participants selected company core competencies on the grounds of personal expertise and relevance to project work.

Work-Based Practitioner Enquiry introduced a range of research approaches appropriate for work-based projects.

Work-based Research and development project.

The experience of the University in working with major corporate clients has highlighted the potential for learning in the workplace to be used in combination with RPL and develop research projects that combine individual learning with organisational development.

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Dadze-Arthur, Abena; Cendon, Eva

FernUniversität in Hagen, Germany

Keywords: interlinking theory and practice, higher education, terminologies, comparative approach

Exploring terminologies used to describe the interlinking of theory and practice in Higher Education in Denmark and the US

Approaches to incorporating traditional academic education with professional practice are increasingly forming part of national learning strategies in Higher Education (HE) – Denmark and USA are no exception. There is, however, an array of terminologies to describe the plethora of approaches that national HE sectors take, including for example work-based learning, work-integrated learning, problem-based learning, cooperative education, dual programmes, and apprenticeship – to name just a few. Despite the growing body of literature associated with this topic, there is no broad-based consensus on definitions, and both terminology and usage often seem ambiguous and haphazard. By examining the educational contexts and institutions, within which selected terms used in Denmark and US are embedded, this paper aims at clarifying their distinct role and agency as vehicles for interlinking theory and professional practice in HE. Furthermore, the final section seeks to shed light on their conceptual similarities and differences, as well as their pedagogic underpinnings, and what can be learned from both when developing programmes connecting theory and practice in HE.

Derrick, Jay

UCL Institute of Education, United Kingdom

Keywords: practice-based innovation, practitioner learning, tacit pedagogy, organisational development

Exploring 'Tacit pedagogy' and 'entanglement' in practice-based learning and innovation: evidence from a qualitative study of a high-performing engineering company

Improved understanding of the links between organisational development and practitioner learning is of critical importance in times of unparalleled technological, social and economic change, and these links are one of the major areas of concern of the literatures on workplace learning, organisational development, and education and training policy. However, much of

this work has tended in the past to focus on formal and/or easily-measurable aspects of work, thereby understating the role and significance of workplace cultures and norms, and of informal interactions between practitioners (Jensen et al 2007). Among the shortcomings of these studies is that they cannot provide a convincing account of innovation and its relationship with learning, and that they offer few practical ideas to organisations aiming to foster and support innovation, or to support their practitioners to be innovative.

This paper will report on the findings of a comparative and qualitative study of learning, team-working and innovation in a high-performing organisation in the UK: the Research and Development division of a household-name company which has been a significant contributor to global technological developments in broadcast engineering for nearly 100 years. The study investigated and aimed to identify (1) the informal features of organisational culture, work processes and strategic orientation that support learning and/or innovation; (2) how these features practically interrelate with the formal structures, policies and procedures of these organisations; and (3) how learning, innovation and practice are interrelated conceptually and practically.

In order to make sense of the data from this study, the paper will introduce two conceptual tools: 'tacit pedagogy', and 'entanglement'. These, it will be argued, provide conceptual links between the idea of 'problem spaces' within practice (Guile 2014), and Fuller and Unwin's (2004) notion of expansive workplaces, thereby enabling the outlining of a socio-material account of innovation through practice. 'Tacit pedagogy' refers to the totality of factors, agential and environmental, making up the field within which practice takes place: it critically consists of both informal and formal elements of this field. 'Entanglement' acknowledges the phenomenological indivisibility of practice into formal binaries (such as 'theory-practice' or 'formal-informal'), notwithstanding the conceptual utility of doing so.

The paper will argue that a cycle of innovative practice can be observed in the data from this organisation, consisting of team-working practices that foster workplace learning through incorporating various modes of reflection, 'writing up' and peer review, the vast majority of which take place informally rather than formally. Finally, the paper will briefly suggest ways that organisations can support these modes of working and learning.

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A Model for Institutionalizing Organizational and Symbiotic Learning – Its empirical, historical, and theoretical background

Organizational learning and work life development has challenges concerning how to organize as more than one project following another, i.e. on a permanent basis. Most approaches are still stuck in individual learning as models, and most efforts are organized as time-limited projects. There is a need for permanent structures and practices – reflective spaces – in and between work organizations and in civil society, for both individual and collective learning. There is also a need to address how to improve independently from market requirements and business competition; a growing need not just for measurements but for adequate standards of measurement. The need for improvement is more basic and general than market adjustments in a world achieving sub-optimally on many indicators (climate, wealth distribution, injustice, pollution, mass extinction, populism, etc.).

Researchers like Ellström (2005) and others seem to think of the "logic of performance" and the "logic of development and learning" as incompatible. During several decades at the Work Research Institute in Oslo, a model or a way of thinking was developed – starting in the 1960s as a search for alternatives to Taylorism and Scientific management – which has potentials for solving this difficulty. The model distinguishes between a work organization organizing basic "production tasks" and a development-organization organizing meta-tasks interacting through an iterative and systematic alteration between "playing roles" on-stage and stepping reflectively "out of" the roles back-stage (Eikeland 1997, 2012). In this presentation we will present and discuss the historical and theoretical basis for the distinctions in this model. The distinctions have a profound basis in "geschichtliche Grundbegriffe" (Koselleck, 2002) like the distinction between oikos/pólis, private/public, and work/leisure and in social-psychological models (I-me) (Eikeland, 1997 & 2008)

Questions discussed: How to organize for the institutionalization of practice-based learning, for continuous learning, and for collective learning / organizational learning? How can systems of organizational and symbiotic learning replace both commercial competition as the only driver of change, and also the mostly didactically based mass-education (Eikeland, 2012b)?

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Community Organisation as Workplace and Research as Work

In South Africa and many other countries there is a call for a more inclusive approach to curriculum that is often called decolonising the curriculum. The aspiration is to re-imagine the teaching and learning spaces, pedagogy and curriculum content in order to respect and build on traditional knowledges and values. In addition there is an urgent need for capacity building of a new generation of researches with the desire and ability to conduct research that is more relevant to the needs of the many marginalised people living in communities with high levels of unemployment, poverty, substance abuse, and violence. One way to influence the research agenda and encourage postgraduate students to conduct meaningful community based research is to transform the postgraduate curriculum. This will facilitate the provision of opportunities to engage with communities, allow for the building of skills in research methods suited to the co-creation of knowledge and foster meaningful partnerships

This paper will present a research project formulated as a knowledge partnership for the capacity building of postgraduate students and social transformation in a troubled community. The partnership includes a university in Sweden, a university in South Africa, a community in the South Peninsula of the Western Cape, South Africa, a non-Governmental Organisation (NGO) located in the community and residents of the community. The design of the study positions the community as an organisation or workplace and research as work. This enables the co-creation of living knowledge related to the improvement of well-being in this

deprived community, alongside the development of research skills and the conduct of relevant research.

Activity Theory was applied to conceptualise the roles of the higher education institutions, the NGO and the community. The findings of this analysis will be presented to demonstrate the impact of these activity systems on the achievement of the challenging shared object; improving the level of wellness in this troubled community. The internal contradictions created by the clash of some rules and stakeholder goals will also be discussed. The understanding that was gained is that this community can be envisaged as a workplace or organisation that offers work as research and transformative activities. This complex and inter-connected structure of work and learning creates a shared object that is influenced by a number of activity systems including; the universities, NGO, health clinic, schools, community forums and the residents in this community.

A project that aims to integrate research and education goals is challenging. However through this deeper understanding it can be seen that universities, NGOs and communities can partner together to re-think a postgraduate curriculum in order to create a dynamic space for capacity building and positively impact on the wellness of a community. If we are able to integrate our dual roles and responsibilities well we can build a next generation of researchers with the capacity and motivation to make a difference in the lives of others wherever and whatever they research.

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Keywords: Vocational teachers; work- oriented programmes; boundary-crossing; work-process orientation; dual professionalism

Vocational Teachers in Work-based Transitions: A comparison of boundary-crossing practices

International policies promoting learning in the workplace for young people have been rationalised by discourses that prioritise knowledge uniquely available in the workplace. Yet responsibilities for supporting this learning are not only allocated to experienced workers and trainers but also to vocational teachers located in schools and colleges. Although the latter are not located within the workplace, they are expected to support young people's transitions into employment (and more broadly into adulthood). Across increasing numbers of countries, vocational teachers are located on what can be described as work-oriented programmes, which combine elements of workplace learning with time spent in a school or college.

Workplace knowledge is increasingly valued above that provided within vocational schools and colleges. Consequently teachers are expected in many countries to base their expertise and their educational practice less on formalised school subjects than on practical issues relating directly to production and service delivery. These expectations have reached different

levels within particular national systems. Particularly in countries where work-based element of upper secondary education, have increased, the notion of 'boundary-crossing' has been raised in opposition to the characterisation of workplace learning as inherently superior to learning in schools and colleges. This has sought to validate the role of schools in helping students to combine their experience of workplace problems with extended concepts and theoretical knowledge in educational settings (Tanggaard 2007; Berner 2010; Guile and Young 2003). This concept has been further extended to boundary-crossing activity by vocational teachers (Fejes and Kopsen 2014).

Extending the application of the boundary-crossing concept to additional settings, a study compared their practical application in both the established 'dual training' system of Germany to a comparator study of vocational teachers in England. In Germany, vocational school curricula are organised around concepts that reflect the work experiences of apprentices (Lernfeldskonzept; Handlungsorientierung). In England, such work-oriented programmes are relatively recent but important developments (Richard 2012; Independent Panel on Technical Education 2016) following criticism of a separation of college-based learning from employment practice. In a small-scale qualititative study comparing teachers, their approaches and their professional formation across these two countries, significant differences in approach emerged.

Analysis suggests that, despite extensive professional formation, teachers in Germany recognised challenges in mediating the differences and difficulties in students' workplace learning experiences. In England, where notions of 'dual professionalism' and 'vocational pedagogy' focus on questions of occupational expertise rather than the educational challenges of linking upper-secondary education to the workplace, teachers tended to see colleges and workplaces as distinctive spheres. It is suggested that, in countries with little experience of combining learning in educational settings and at work, the valorisation of workplace expertise at the expense of general knowledge may prevent attention to pedagogic challenges that are central to the experience of educators in many European countries.

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Choosing one's future? Narratives on educational and occupational choice among folk high school participants in Sweden

This paper focuses on occupational choice as a component of students' life histories, embedded in specific social structures and contexts (Reay, 1995; Reay, David and Ball, 2005). The paper is a response to the argument that there is a need for greater focus on the learning careers of individuals, and how these careers are connected to wider social structures, in order to understand how and why occupational choices are made (cf. Hodkinson and Sparkes, 1997; Bloomer and Hodkinson, 2000; Billett, Newton and Ockerby, 2010). We specifically focus on the relation between an educational institution in Sweden, the folk high school (FHS), that primarily delivers non-formal education, ranging from compensatory education to elite education, and the labour market. More specifically, we are interested in the reasons why participants choose to study the courses they do and what their occupational aspirations are.

The paper asks the following question: How do participants on different courses at FHS motivate their educational and occupational choices and what similarities and differences can be identified among participants on these courses?

Drawing on a narrative approach (Polkinghorne, 1988; Babmerg, 2010) we analyse interviews with participants on a basic course (n14) and the theatre course (n10) at one folk high school in Sweden. The interviews focused on questions about what participants considered to be important regarding educational learning for their presumptive occupational futures, both inside and outside popular education. Among other things, the interviewees spoke about why they had taken up studies at the FHS and about their aspirations for the future.

Our analysis identified five occupational trajectories among student interviews: a desire to get away; a desire to get back on track; a desire for employment; a desire to change occupation; and a desire to realise one's dreams. We argue that these trajectories reproduce existing social stratification in society, whereby certain futures are available to some people, and not to others.

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Identity formation among Swedish vocational students

The paper focusses on vocational identity formation among students enrolled in vocational education in Sweden. Recent policies and reforms in Sweden have upgraded the priority of workplace-based learning in vocational education to make a smooth school-to-work transition. Such pathways can be examined as part of a broader process of identity formation including the transformation of the identity as a student to a vocational identity. Research on vocational students' identity formation is however still scarce and the students' perceptions of their vocational identity formation are not fully investigated. As Billett (2014) argues, there is a tendency to disregard the students' perspectives of their vocational identity formation. Against this background, the aim is to investigate vocational students' experiences of their identity formation to a vocation in the industrial sector. Twenty-eight interviews with students enrolled in the three-year industrial programme from four upper secondary schools were conducted.

In the analysis of the students' vocational identity formation, the concepts of learning trajectory and social categorisation were used as a theoretical lens. The findings show that vocational identity formation is not a linear process. Instead, three main learning trajectories emerged, each one portrayed a homogeneous student group in which the vocational identity formation had similar characteristics regarding the students' background, present experiences of workplace-based learning and perceptions of the vocation and future work. The committed students planned a long-term future and career within industrial work. The flexible students were relatively positive to industrial work but planned to change career after a few years in the industry. Lastly, the ambivalent students had no obvious plans for their vocational future. The main conclusion is that vocations and vocational identity still play a vital role among students in vocational education and their voices need be considered to better understand experiences that matters in young people's identity formation processes in vocational education.

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Keywords: Nursing, evaluation, needs, expectations

The Nursing Associate: A supplement to the nursing workforce or replacement?

AIM: This is a local evaluation in which a new role, the Nursing Associate (NA) was piloted in a site in South East England. The evaluation explored local expectations and needs and investigated factors influencing the development, implementation and experience of the role.

BACKGROUND:

Like other high-income countries, the UK faces a greater demand for healthcare however, nursing vacancy rates in England currently stand at are 17%. The context to this includes, health and social care funding that has failed to keep pace with demand, the introduction of clinical safe staffing ratios and threats to the numbers of nurses being trained. In light of shifts in UK immigration policy before and subsequent to the 2016 referendum regarding the UK's membership of the EU, international nurse recruitment can only partially address workforce shortages. The need for more sustainable approaches is imperative. The Nursing Associate role was introduced in England in a bid to bridge the gap between healthcare support workers (HCSW) and registered nurses (RN).

METHODS: The purposive sample included NA trainees (=14) participating in two focus groups. The first focus group explored factors influencing the decision to undertake the role and aspects of the training programme. Using semi-structured interviews four case studies further explored understanding and experiences of trainees (n=4), their mentors (n=4) and their clinical teams (n=120). From participating organisations, stakeholder interviews explored understanding of the role at different levels of the healthcare organisations involved (n=12). Representing communities, governors from each organisation were also interviewed (n=5). The final focus group explored trainees' short and longer term plans upon completion of training.

RESULTS: The evaluation explored; individual learning and practice, clinical teams, organisations' workforce plans and partnership working.

Preliminary findings indicate trainees, mentors and clinical teams, perceive the role bridges the skills gap between RNs and HCSWs with the potential to improve the safety and quality of care. The role is understood as one that supplements rather than replaces nurses. Trainees' reported increased knowledge and skills, though they perceived existing knowledge and skills was underestimated and a risk of deskilling occurring in some placements. Trainees also expressed confusion regarding the role as a possible route into nursing.

Other stakeholders were less clear about this role. There were organisational differences regarding how this role may contribute to workforce planning and how this new role will contribute to skill mix.

Partnership working was reported as effective though there were perceived differences regarding how the initiative was led and valued by participating healthcare organisations.

CONCLUSIONS: The evaluation identified for trainees, the NA role offered individuals the opportunity to simultaneously work, earn and learn. The role offered HCSWs previously without a route, career progression. For teams, the role appears to enable workload to spread according to skill and as claimed by policy makers, bridge the gap between the RNs and HCSW. Less clear is the longer term development of this role within participating organisations and how this will influence their nursing workforce plans.

Workshop 18

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Keywords: further education in enterprises, adult education centers, program planning, constellations, cooperation, program analyses

Services of Adult Education Centers for Further Education in Enterprises - Insights from a Current Research Project

The paper discusses observations on the services that adult education centers make available for enterprises and their further education measures. It is centered around findings and theory-building from a current research project carried out by the authors. The project examines vocational and professional further education in adult education centers in Germany using a case study design. Cases were chosen from different regions in Germany. Within this methodological framework, we apply programme analysis, statistical data as well as an interview and a focus group design in order to capture planning strategies, learning needs and their interrelation.

Adult education centers, as publicly sustained and operating educational institutions focus on broad programmes and courses open to the public in the first place. However, they add on contracted offerings for enterprises as a programme segment. Concerning this segment, one could ask the following questions:

What is the current state of this segment? How did it and does it develop? How is it substantiated? Which learning topics and forms are being conveyed for whom? How does the programme segment contribute to further and professional education in enterprises? How and on whose initiative do these contracts and cooperations come into being? How do they relate to the open programme segment and are they an increasing or a decreasing segment within adult education centers? Which regional factors and needs play into the respective individual offerings that we find? Do the contracted offerings lead to more flexibilisation or -

on the opposite - to more standardisation of further education in enterprises? Do they more aim at the substantiation of "vocations/professions" or of "jobs/duties"?

The paper aims at contouring the particular focus and strategies of both enterprises and adult education centers in their cooperations and contracts on the background of the questions displayed. We will present insights into our research categories as well as provisional findings from our analyses (programme analyses, first interviews with program planners).

As a theoretical background we call on (international) theory and models of programme planning in adult and further education (Fleige et al. 2018; Käpplinger et al. 2017; Gieseke 2008). With regard to enterprises as particular learning venues we make reference to the notions of "functions" and "actor constellations" (von Hippel 2016) as well as pedagocial and economical strategies underpinning their learning programmes and cultures (Fleige & Robak 2018; Käpplinger 2016; Gieseke 2009; Dehnbostel 2008; Schmidt-Lauff 2002). Furthermore, we both use and hope to contribute to the current (international) debate on cooperation in adult and further education.

Workshop 16

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Keywords: Employee-led innovation; cause; healthcare; work organisation, learning

Innovating for a cause: the work and learning required to create a new approach to healthcare for homeless people

Innovation has come to occupy a pivotal place in our understanding of knowledge-based economies over recent years. Indeed, the innovative knowledge-economy is now widely seen as key to building economically and socially prosperous societies. Whilst research and development is still regarded as the main route to innovation, there is increasing awareness of the importance of alternative sources of innovation such as employee driven innovation, which emerges in and through work. This is raising questions about how such innovation originates, the role played by employees, work practices and learning. This paper explores these issues empirically through case study research into a new approach to providing healthcare for homeless people in England (termed 'Side by Side'), and also conceptually by bringing together insights from the employee-driven innovation literature, and more broadly from social and practice-based learning theory and organisational theory. We argue that applying these perspectives to the analysis of our qualitative data enables illumination of the innovation as a process – not an event – and as an ongoing set of organisational practices that transcend their origins. We have collected data from differently positioned participants involved in the innovation via interviews and observations of day to day workplace and organisational practices. In our discussion of the evidence, we further argue that the notion of 'a cause' is helpful in elucidating the impetus and the commitment to making the innovation happen (and go on happening). Our findings are presented under three themes: 'establishing

a cause', 'organising for innovation', and 'innovative capability in practice'. Building on these, we have identified five key interrelated processes or dimensions ('disrupting', 'othering', insider-outsider identity', 'storying', 'transversality') which help conceptualise the work and learning that it took to create and (re-)enact the innovation and that we suggest may have relevance for understanding and characterising other employee-led innovations in and perhaps beyond healthcare.

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Translational Research as an integral part of Work –based Learning

This paper explores the concept of translational research as an appropriate strategy for work based learning. Translational research as the name suggests it is about the translation of research findings into practice. Practice and practice development are integral to the learning in the work place and translational research is therefore an excellent mechanism for work based learning.

Medicine is its main exponent but it is becoming increasingly commoner in other areas. Traditionally translational research refers to the translating of laboratory based findings to clinical practice as such is a highly prescriptive and regulated approach. More recently, Public Health has explored ways of translating findings of epidemiological studies into clinical practice and education has also explored strategies which can be used in the translation of research into both curriculum design and classroom practice. Although clearly it is applicable to a range of practices and disciplines

There are two main issues which need to be considered in translational research, the nature of knowledge and the roles involved in the translation of research findings into practice:

The knowledge valued in different disciplinary areas can differ for example in medicine and the health professions application of research is highly regulated and controlled, novel and innovative ideas go through a rigorous testing process. Whereas in many business settings and in the creative industries novel and innovative ideas are the starting point. Having determined the knowledge which is valued the tensions which are inherent in the work place need to be explored. Traditional ways of doing things can be challenged and this can draw on skills

The roles played are important and central to the translation. In work based learning much will depend on the programme and the stage involved, for instance in doctoral programme the students may take the lead whereas in undergraduate programmes the student will be part of a highly supervised and supported team

It is an approach which if planned and correctly executed develops practice and it can be a very powerful tool for learning to demonstrate this the paper will conclude with a case study of a transitional research project. Involved the translation of research study into practice in a care environment. The stages involved will be discussed and outlined in some detail. The benefits and drawbacks of the approach, as a learning tool will also be outlined and considered.

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Keywords: change laboratories, activity theory, university of technology

Reimagining universities of technology

This paper responds to the sub-themes of 'methodology building in RWL' as well as to 'cultural, historical perspectives on work, learning, agency and social change'. The research, furthermore, sits within the broad theme of 'enterprise', perhaps in a slightly different sense, in the form of the 'enterprising university'.

In South Africa, in 2004, the previous 'technical colleges' (named technikons) were established as universities of technologiy (UoT), to distinguish them from traditional research universities, (Universities of technology are similar to faschschule and polytechnics). There remains confusion in the UoT sector as to what the form, purpose and mission of UoTs should be: How are they, for example, to be distinguished from more traditional universities? Without such purpose, delineation and mission it is likely that the sector is not functioning as well as it should. A further question flowing from this, then, is whether the UoT sector as a whole through not realising its full potential, is less able to contribute to the wellbeing of school leavers through enhancing their employability, and also to the wellbeing of society and industry more generally.

The issue addressed in this paper is the potential response that a university of technology might have to its often conflicting agendas of social responsibility, graduate employability and research output. In order to address this issue the researchers have drawn on the cultural historical change laboratory approach (Virkkunen and Newnham, 2013; Sanninno and Engestrom, 2017). The research reports on three Faculty change laboratories in operation at two universities which are currently in operation in Health, Design and Hospitality Studies.

The first stage in conducting the change laboratories in this research was the gathering of information, through activity-theory-inspired interviews and workshops, to act as stimuli for the more structured, sequential change laboratory workshops in which groups of staff grapple with the identity of the UoT. Information gathered thus far reveal that academic staff have a vision of the 'enterprising university', i.e. one that is contextually bound to local

industry and community and is flexible enough to respond rapidly to new issues and changes. The change laboratory itself is a formative intervention in which those working at the coalface rather than senior management work collaboratively to identify problems, contradictions and new ways of thinking and working emerging from analysing these contradictions. The laboratories typically involve 5-6 sequential, guided sessions. These initial, roughly conceptualised ideas or 'germ cells' are then developed and put into practice, either as scenarios or in real practice, thus ascending from the abstract to the concrete (Sanninno and Engestrom, 2017).

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Keywords: VET, Argentina, partnerships, IT sector

Building strategic relationship: Linkage between the IT sector and secondary technical education in Resistencia (Argentina).

The link between the technical school and work should be a strategic pillar for Argentina for two main reasons. On the one hand, for its role in the training of labour skills as a basis for the productivity of the economy. On the other hand, for the essential that students of technical schools receive a quality education that strengthens their skills in training for work.

Software and Information Services (SSI) subsector is one of the sectors with the most significant future potential for growth and job creation in the country. In particular, the principal constraint in 2017 to grow was the lack of skilled human talent.

Thus, it is strategic for the country and especially for the provinces of lower economic performance such as Chaco (in particular, Resistencia, its capital city), to analyse the current situation of the articulation between the secondary technical school and the socio-economic sector. The present investigation analyses, under the local development approach, how the link between the secondary technical educational offer and the IT sector in Resistencia (Argentina) is configured and describes how the main actors of this network operate. After characterizing the protagonists of the framework, the paper focuses on representing the articulations between schools and companies, using as a tool of analysis a typology built on the basis of desirable characteristics of this articulation, high quality (sustainable, strategic and contextualized) and frequent, with the objective of measuring the gaps between the real and the desirable to trace the paths of possibilities that lead to a strengthening of this articulation.

Vázquez Barquero (2000) considers that there are two significant issues that have an impact on the actions of local development strategies: the development of potential existing in each territory and the organisational capacity of local actors. On the first point raised by Vázquez Barquero according to with secondary data presented in the article, there is no doubt. On how the second question is carried out is a fundamental part of questioning in this paper. That is why, through semi-structured interviews, we understand what the links are, what kind of strategies, how they are articulated in practice, what mechanisms actors use to manage the strategies in this particular territory and how these strategies converge with the different levels or scales of government.

As main results, there is a low degree of articulation (few instances) and most of the low quality. The articulation between the protagonist actors (Officials, companies and educational establishments) could undoubtedly be strengthened. Each one of the actors has their own and non-delegable roles, but there are little coordination and even less of a strategic nature.

For what remains in relevance as the level of articulation of linkage between educational establishments and companies is configured through an artisan framework of links between the protagonists, of low quality and frequency.

Workshop 22

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Keywords: Migration, language, work, inclusion

From 'language for work' to 'language through work' in the context of migration and inclusion: lessons learnt from recent research and practice across Europe

This paper presents findings of recent research in several European countries on ways to use safety and quality management systems in low-paid workplaces to support language development by migrant workers and also native speakers with low educational attainment.

Against the background of rapid technological development, the rise of service industries and an increasingly globalised economic system, work activity and work organisation have changed radically in recent years, greatly increasing the communicative demands of work at all levels of employment. Language has become "la part langagière du travail" (Boutet 2001). At the same time, and very much linked to these developments as well as to demographic change, migrants have come to play a crucial role in many economies. This reliance on migrant labour, particularly in lower-paid sectors such as social care, retail, hospitality, transport and such like, poses further communicative challenges for all concerned. Labour market shortages often lead to the recruitment of migrants with quite limited communicative skills in the language of the host country; yet, in most cases, formal support for language learning ends when migrants gain employment. For many migrants, particularly

those with limited, interrupted or no formal education, long hours and low pay discourage further participation in formal language learning – leaving many effectively 'stuck' in the "low-pay, low-language trap", with negative consequences for the individuals and the economy of the host country (Sterling 2015).

Not only the language requirements have changed, but also the understanding of language and language acquisition have changed and taken a "social turn" (Ortega 2009; Ellis 2008). Language is more than a formal system of grammar and lexis to be learnt in the classroom, but an instrument to construct social realities, among other vocational/work-related knowledge and know-how. Language use is interpersonal and thus shaped by social norms. Understanding is not (only) the result of formal correctness, but of bilateral negotiations. The responsibility of mutual understanding does not lie exclusively on the newcomers. Employers and colleagues are also responsible for effective and efficient communication.

In this perspective work-related L2 learning has to get out of the classroom and be supported "in the wild" (http://languagelearninginthewild.com/). In our case it is the workplace, exploiting the structured opportunities that work offers for language development such as team work, health and safety, quality management.

The solution to this superdiverse issue is how to better integrate formal instruction with non-formal and informal learning arrangements and who can profit best from which type of learning and in which time? Which competences need key actors like language and VET teachers and providers? Which support is most adequate for which learners? What support needs employers and job centres to make workplaces into language learning places?

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Guile, David[1]; Krzywdzinski, Martin[2]; Margaryan, Anoush

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Keywords: 4th Industrial Revolution, Autonomy, Expertise, Learning

New modes of digital production: issues of autonomy, immaterial expertise and learning

Accounts of the continual transformation of the means of production from Post-Fordisn to, what is widely referred to as, the 4th Industrial Revolution often refer to the potential deployment of new technologies' potential to improve working conditions (Acatech and Forschungsunion, 2017; Schwab, 2015) or replace human with robotic labour (Ford, 2015; Srnicek and Williams, 2015). The aim of this symposium is two-fold: to focus on a number of issues associated with the former development and to highlight their contradictory character; and, to shed light on the way in which new expressions of autonomy, expertise and agency are emerging which have implication for how we understand and research in future the relationship between working and learning.

Taking as its starting point, the argument that:

"It is highly likely that work in Industrie 4.0 will place significantly higher demands on all employees in terms of complexity, abstraction, and problem solving. In addition, employees will be required to have very high levels of self-direction, communicative skills, and self-organization abilities. In short: Employees' subjective skills and potential will face even greater challenges. This offers opportunities for qualitative enrichment, interesting work contexts, increasing individual responsibility, and self-development" (Acatech/Forschungsunion 2013, p. 57).

the symposium will explore this contention from three perspectives.

The first presentation, which will be based on Krzywdzinski and colleagues' (2017) work, will use empirical evidence from Germany in factory-based manufacturing to question the extent to which the above technological promises are justified. The presentation will start by arguing that although initial research findings contradict these expectations of improved work quality and increasing autonomy, the key question is not whether the organization of work enables individual autonomy but whether the rules of interdependence and cooperation are defined in a "participatory and cooperative process". In making this argument, the presentation will follow Adler (2007) and argue that that the reference point for emancipatory demands on work should be a participation-oriented interdependence rather than individual autonomy, since this allows a fuller and richer analysis of the digitised work process and its working-learning possibilities.

The second presentation, which will be based on Guile and Wilde's (2019, forthcoming) work, will use empirical evidence of client-facing interprofessional project teams in the global construction industry where teams are working "in the wild", to identify the type of expertise associated with the AI technology Building Information Modelling (BIM). The presentation will, in line with Krzywdzinski and colleagues, argue that the organization of work in client-facing interprofessional project teams engenders the establishment of participatory and cooperative processes, because the key issue for teams is to "capture and trade externalities", that is, knowledge, ideas etc. that will enable them to complete the contract they are working on. The presentation will define this form of expertise as "immaterial expertise" and explain how it is learnt through forming "situated interprofessional judgements".

The third presentation, which will be based on the work of Margaryan (forthcoming A and B) will focus on a different, but related, dimension of the digitisation of society: the practice of crowdwork, that is, the use of Internet-based platforms to bring together people from across the world to carry out tasks for

pay. The presentation will explain firstly, the context and the nature of crowdwork, a form of digital work in which the work is both coordinated/allocated and carried out entire online. Secondly, the presentation will draw on empirical evidence to show that crowdworkers regularly undertake a wide range of workplace learning activities, both individually and with others; specifically, they regularly develop new skills while working on the platforms, through performing novel tasks, collaborating with others, reaching out to peers and clients for feedback, as well as engaging in classroom-based and online courses and using online tutorials which they pay for, investing their own financial resources in their workplace learning and development. The presentation will conclude by outlining a range of factors – individual, social-cultural and environmental – that may explain ing why crowdworkers exercise agency in the above ways.

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Harteis, Christian; Steffen, Bianca; Merk, Viktoria; Port, Sonja

Paderborn University, Germany

Keywords: digitalization, workplace learning

Digitalization of work: Challenges for Workplace Learning

The digitalization of workplaces can introduce changes on various levels of work activities. Educational research follows the transformation to digitalized work with ambivalent approaches: On the one hand, there is the optimistic perspective expecting to improve the quality of work and worklife, whereas on the other hand there is the expectation of decreasing quality of work and worklife. Anyway, there is agreement that digitalization will effect changes at workplaces that workers have to react upon. There is disagreement how employees experience these changes at their workplaces, if they experience affordances to engage into learning processes or if they experience constraints that inhibit further engagement in learning.

This contribution describes an empirical study on several workplaces in automotive industry that are in particular danger to become dispensable because digital technology is supposed to take over routine tasks in administration and on the shopfloor (Brynjolfsson & McAfee, 2014). As there is disagreement on effects of digitalization, this study focuses empirically workplaces that are already affected through digitalization. The investigation aims at analyzing how employees experience the effects of digitalization in terms of the demands and resources afforded to them and how they deal with the changes through digitalization. Additionally, the study aims at revealing learning demands through digitalization.

This proposed contribution describes an exploratory empirical interview study with 12 employees in varying responsibilities and functions working for a German industrial enterprises within the automotive sector. By referring to prominent theories on workplace learning, e.g. the job-demand-control model (Karasek, 1979) and the sociogeneses of work practice (Billett, 2001), the interviews will reveal how employees perceive the effects of digitalization and their potential for learning. Employees' workplace learning is considered to be a crucial precondition to successfully implement digitalized work procedures.

To ensure a wide perspective, this interview study triangulates the various perspectives of each three clerks, members of the workers' council, and human resources staff. This way, this contribution provides a broad range of promises and perils that employees experience through digitalization.

Interviews will be conducted between December 2017 and March 2018, all analyses will be completed before the conference.

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Keywords: Organisation based self-esteem (OBSE), job factors, disability

What Job factors enhance organization based self-esteem (OBSE)most among employees with disabilities

There are 3. 5 million persons with disabilities in Canada, making up 10 % of the general population, and yet this minority group is under-researched in academic fields (Lengnick-Hall et al., 2008; Shore et al., 2009). Previous studies have mostly focused on workplace accommodation and removing hiring barriers for employees with disabilities. This study will investigate job factors such as pay satisfaction, satisfaction with schedule flexibility, job satisfaction and workload as predictors of organization-based self-esteem (OBSE) among employees with disabilities. The study targets approximately 1500 persons with disabilities in the workforce in Ontario, through a systematic random sampling approach. A quantitative approach will be used, involving the administration of a questionnaire that has been chosen because it has the ability to test whether independent variables (job factors) and dependent variables (OBSE) are related in the selected sample. The constructs in this study will be operationalized using scales found in the existing literature. Each job factor will be measured using a Likert-type scale and using control variables such as age, gender, and tenure with the firm. In terms of results, a positive correlation is expected to be found between the selected job factors (independent variables) and OBSE (dependent variable)—thus, the greater the satisfaction that employees with disabilities find in terms of pay, workload, schedule flexibility and their job responsibilities, the higher the OBSE level. Hence, if organizations succeed in optimizing these factors, they will attract, engage, and retain persons with disabilities, which will relieve the burden on social security systems and improve the quality of life for this group of individuals.

Morris-Wales (2010) noted that there is a need to determine the most important employment factors affecting the career progression for persons with disabilities. The present study responds to this call for research by addressing the following question: "What employment factors are the best predictors of high organization-based self-esteem (OBSE) among persons with disabilities in the workforce?" This is the first study of its kind to link OBSE with job factors among employees with disabilities.

A careful review of the literature suggests that the situation of employees who have disabilities has been investigated in a variety of ways, including in terms of the barriers faced when trying to find and retain employment, differences between employees who have disabilities and those who do not have disabilities, and the role that personal as well as

organizational characteristics can play in relation to the workplace experience of employees who have disabilities. However, there is a significant gap in the literature insofar as there has been no research that has sought to investigate the link between OBSE and job factors among disabled employees. Furthermore, as OBSE has previously been found to moderate the effect of certain types of work commitments (Hui & Lee, 2000) and on satisfaction and performance (Pierce, Gardner, Dunham, & Cummings, 1993), There is nothing in the literature suggesting the moderating effect of OBSE on the selected job factors among persons with disabilities.

Jakobsen, Anders

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High school teacher identities in transformation – presentation of a qualitative research design

The paper will presents a research design for my ongoing Ph.D. research project (current working title: "Professional teacher identity and institional transformation – a study of the Danish high school") at Roskilde University, Denmark (on basis of a earlier draft). The aim of the project is to investigate changes in the subjective experiences and professional identities of high school teachers in context of recent changes of the danish high school. The purpose is to contribute to the development of the teacher training programme ("teoretisk pædagogikum"), which is aimed at preparing the high school teachers for reflexive and engaged professional practice. The purpose of the paper at the conference is to present a critical theoretical research design before a final revision and the commencement of the interviews. The research question of the project is the following: "What teacher identities are available in the current high school, and in what ways do they pose possibilities and obstacles for developing (new) critical professional work identities, oriented towards engaging in the future development of the high school in society?"

The Danish high school has in recent years seen a number of transformations. Firstly reforms of the education increasing the focus on interdisciplinary teaching approaches. Secondly the composition of the students has changed in recent decades, and therefore in the students' subjective orientations towards education. Thirdly recent decades has seen an increasing political interest in the high school, expressed in a management turn towards New Public Management

To encompass these dimensions of the transformation and their subjective expression, the project works within the critical theoretical approach, combining both subjective and institutional levels, historical and synchrone dimensions, with a critical knowledge interest. Subjective experiences and professional identities are thus understood in context of both the local work place and wider societal changes of importance to the high school. Work is at the same time understood as on the one hand a central human expression and identity, but at the

other hand also as potentially alienated wage labour, and thus as basically conflicted, and a source of ambivalent experiences on the level of the individual.

To combine the above in a single design, the project combines a reconstruction of the societal dimensions of the transformation of the high school and the teaching profession, with observation and research on the level of the work place, and with qualitative interviews with individual high school teachers. Teachers will be recruited from four different high schools, for a combintion of the general high school (STX) and the technical high school (HTX), older and younger teachers, and social differences in pupil populations (The Ministry of Educations' socieeconomic scores of each institution). The approach of the analysis will be critical hermeneutical, drawing upon Becker-Schmidt and her concept of "ambivalence".

Workshop 21

Keogh[2], Shelagh; Fulton[1], John Anthony

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Keywords: tensions, mode 2 laerning, values.

Tensions in Work-based Learning

This paper is the result of an evaluation of workable learning in programmes across two Universities, a series of issues were raised and the issues will be considered systematically and ways of addressing each one will also be considered.

The paper will commence with a consideration of the tensions which can arise in the work place, specifically:

Many programmes have a theoretical component and the balance between student/work life and family needs some detailed consideration. Students are expected to attend lectures and also work in many cases what amounts to a full time job, an additional factor is that while assignments are associated with theory but in the work place students are expected to compile portfolios which can be demanding and time consuming.

Often the work based and the theoretical component can be polarised rather than integrated. The workplace often responds and changes more quickly than the academic environment. In other words there can be a mismatch between what is taught and the theory behind certain work based initiatives. Similarly, the skills which the students are expected to address and master in the work place are, due to changes in technology or in focus, often not available.

Work based learning can involve what Gibbons et al (1996) referred to as Mode 2 learning, which involves drawing from a range of disciplinary approaches to address problems which occur in the work place, which can mean the drawing from a range of theory. While this is an excellent learning opportunity for the student, it can provide many tensions for the student who is following more traditional ways of learning offered by Universities which can involve a highly prescriptive curriculum

In many professions, particularly health and increasingly education the Evidence Based Discourse is very strong and students are taught techniques of establishing and identifying evidence, in work based learning the student interacts with and identifies the tacit knowledge inherent in many and to do this engages with reflective practice. This can create a very real tension with their academic work

There are very different values of the workplace and the university the demands of the work place for outcomes can often be at odds with the critical approach required in undergraduate and post graduate degree programmes. Many industries have to be responsive to rapid changes in development and policy and the often is not the time for critical debate and highly articulated arguments so valued in academia.

While many of the tensions can be both inevitable and healthy there is a point where they can be detrimental to the students learning. The paper will conclude by consideration of strategies which can address these tensions.

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Workshop 1

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Keywords: professional competence development, pedagogic, police organization, police education, police officer

Professional development- Swedish Police officers' perceptions of competence and life-long learning.

Professional competence development (PCD) for police officers is highly important as their role carries a special responsibility; security in societies. Research in the police field gives attention to many aspects that are essential for police work, but seldom to aspects of how to organize and support police officers' continuing professional development with pedagogical activities in the daily police practice. Policy documents mention the importance of continuing learning for police officers' development and also certain professional competencies that they have to develop. However, few studies investigate what pedagogical activities police officers themselves find supporting for developing professional competences in police work. Compared with for example nurses and teachers, the attention on police officers PCD, is sacral. In this study police officers are interviewed around pedagogical aspects of competence development from police education to police work, and if and why some competences are seen less or more useful after six years of police work. The cohort interviewed is part of a longitudinal co-working project between police educations in six European countries called RECPOL, recruitment, education, and career for the police. Previous studies on nurses, and teachers' professional development, find specific situations, and formal activities, that are valued as important for their awareness of competences not always used but still important

to pay attention to. This awareness clarifies previously learned competences, and make professionals pick up previous assumptions when needed for a continued professional acting. The analysis of the interviews will therefore focus on police officers' perceptions on how they, in daily police work, find space for the kind of professional competence development that is demanded for in society today. The understanding of how police officers' daily competence development is perceived could support and help to organize police officers' professional development in relation to the public's and police occupational desires of a professional police role.

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Keywords: internship, work-based learning, stakeholders, lifelong learning

Promoting Effectiveness of Work-based Learning – Negotiated Accountability Among Stakeholders Involved in Internship Arrangements

Work-based learning has received growing interest in many countries to facilitate school to work transitions of students on the vocational education route. This is often characterised by internship as the predominant form of work-based learning arrangement organised by educational institutions. Students, employers and educational institutions form the primary stakeholders in a typical internship programme, with clearly defined roles in achieving the internship outcomes (Hoyle & Goffnett, 2013). This exploratory study on a 22-week polytechnic internship programme in the Singapore context seeks to examine the role elasticity of the key internship stakeholders that are increasingly blurring in the modern work-learn paradigm. Preliminary findings suggest that the primary stakeholders (i.e. educational institution, employer and student) must be ready to synergistically partner one another in assuming multiple and overlapping roles, to support the holistic learning and development of the students.

Lemmetty, Soila Johanna

University of Jyväskylä, Finland

EMPLOYEE OPPORTUNITIES FOR SELF-DIRECTED LEARNING AT TECHNOLOGY ORGANIZATIONS: FEATURES AND FRAMES OF SELF-DIRECTED LEARNING PROJECTS

Recently, the concept of self-directedness (or self-management) and self-directed learning has become popular in organizational and leadership research (e.g. Knowles et al, 2013; Lee & Edmondson, 2017). It is often connected with the concepts, such as, project-based work, self-directed teams (Moe et al. 2018) or self-managed organizations (Lee & Edmondson, 2017). Theories on self-directed learning are not new, but developed in the field of adult education research. One of the basic reasons for separating adult learning and teaching (andragogy) and learning and teaching of children (pedagogy) was that adults were supposed to be inherently self-directed and mature, or at least, they have a deep need for being self-directed (Knowles, 1975; Lindeman, 1926). More recently, self-directed learning is exam-ined also alongside with workplace learning (Ellinger, 2004; Knowles et al., 2013; Clardy, 2000; Artis & Harris, 2007; Gerber et al., 1995) and it has been studied from the perspec-tives of processes and practices (e.g. Thought, 1971; Knowles, 1975; Merriam & Caffarella, 1999). These processes has been described to include an employee-based learning process design, monitoring, management and evaluation (Pintrich, 2004).

Self-directedness is situation-specific phenomenon. Thus, an individual who is self-directed in one situation would not necessarily be self-directed in another (Candy, 1991). In this study we are interested about self-directed learning situations i.e. self-directed learning pro-jects (SDLP) as well as supporting or constraining frames of these projects in the context of work. Self-directed learning projects at working life mean different kinds of learning situations, where individuals' opportunities of learning and levels of his/her self-directedness varies (Clardy, 2000). Self-directed learning at work also has number of different frames found in the previous studies. These frames are related to the work atmosphere (Baskett, 1993) and supervisory work (Foucher & Prezot, 1997), for example.

This study asks: 1) what kinds of features of self-directed learning projects were found in organizations, and 2) what kinds of frames are included in the self-directed learning projects and how the projects are enhanced or constrained by these frames? The context of this study is technology-field where the rapid development of technologies force employees continuous learning (Li & Herd, 2017) and, where learning is seen to be of individual's responsibility, work-related and self-directed (Lemmetty & Collin, forthcoming). Ethnographic approach was utilized: data consisting observations, field notes and recorded field (discussion-) collected from three organizations. The data were analyzed by ethnographic analysis, utiliz-ing both theory-based content analysis (Hiesh & Shannon, 2005) and ethnographic content division (Bodgan & Bikle, 1992). The findings reveal, that self-directedness, as individual or group

activity, does not manifest as ideal at work because the learning goals are always framed by customers business or work tasks. The study also show that self-directed learning promotes professional competence developed in leisure time. Frames that support or con-strain self-directed learning projects at work are possible to divide as cultural and structural frames. Findigs and future research ideas are discussed in the paper.

Livingstone, D.W.[1]; Kaepplinger, Bernd[2]; Raykov, Milosh[3]

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Keywords: Knowledge, competences, qualifications and needs

Is work-related learning declining? Evidence and explanations

A very firmly established relationship in adult education research has been that between higher level of formal schooling and greater participation in continuing education. It is often assumed by policy-makers and researchers that lifelong learning will lead to ever increasing participation over time. However, there is some evidence, particularly in extended series of national surveys in Britain and Canada, of declining participation in continuing education in terms of rates and/or volumeat the same time as post-secondary schooling completion rates continue to grow. There is also evidence from some European countries of fluctuations in continuing education while post-secondary schooling completion increases. The first decade of the 21st century saw often declining indicators (incidence, participation, time, costs), although differences between countries are often large.

This workshop is intended to present relevant empirical evidence from different countries to assess the extent of changes in the relations between advanced formal schooling and engagement in continuing education generally, vocational education and training, other organized training experiences and work-related self-directed informal learning. The relationship between learning in courses and other forms of workplace learning is of core interest. Data quality and methodology will be carefully considered in comparing developments in different countries. Secondly, contributions and explanations that attempt to identify economic, political and social factors related to such changes and their implications are most welcome for the discussion.

Presentations of the Symposium:

The Growing Gap between Post-secondary Schooling and Further Education: Canada 1998-2016
D.W. Livingstone (University of Toronto, Canada)
This presentation summarizes the findings of a 2016 national survey of the formal schooling, further education, and job related informal learning of the employed Canadian labour force

and compares the results with those of prior national surveys conducted in 1998, 2004, and 2010. The major finding is an unprecedented growing gap between increasing post secondary school completion and decreasing participation in further education. This gap may have begun in a recessionary labour market but may now be driven by the increasing underemployment of the qualifications of post secondary graduates who find little added benefit to further education in their jobs. The incidence of job related informal learning may also be declining. Age and economic class differences in schooling and further education appear to be narrowing in this context. Implications of the growing gap between advanced schooling and further education as well as the increasing incidence of underemployment are discussed.

From an unexpected Stagnation to renewed Growth in Continuing Education: Adult Education Survey in Germany and European Developments between 2007 and 2016
Bernd Kapplinger (Justus-Liebig-University Giessen, Germany)

The analysis explores the latest waves of the adult education survey (AES 2007 to 2016) mainly in Germany and partly in Europe. AES displays for Germany that after years of unexpected stagnation the participation rates are slowly increasing again like in the 1980s and 1990s. The growth of participation in adult education is no guaranteed development, although the long-term developed might lead into this direction until the economy and the environment are not collapsing, which might be less dystopian as someone might have thought decades ago. Thus, it will be also be considered the context and the role of the economic and fiscal crisis, which hit Germany and European economies from 2008 onwards and the general crisis of capitalism in late modernity.

Worker organizing and participation in work-related learning
Milosh Raykov (University of Malta)

Increased educational attainment of new entrants in the labour force as well as the continuous professional development of employees, are two high-priority objectives of policymakers and employers in all countries regardless of their economic and social development (Soriano & Mulatero, 2010; Usher, 2018). Regular monitoring of the enrolment in and completion of higher education demonstrates a continuing growth of both enrolment and completion of higher education (Milana, Holford, Hodge, Waller & Webb, 2017). Projections of global educational attainment also indicate a continuation of this current trend (Lutz, Butz, & Samir, 2017). In contrast to the evident growth of the enrolment and completion of higher education, in the domain of further (Livingstone & Raykov, 2017; Felstead, Gallie, Green, Inanc, & Jewson, 2016) and vocational (Käpplinger, 2011) adult education, much slower growth is evident. There is a wide variety and in some cases declining participation in adult education (European Commission, 2018). Research demonstrates that workers face many obstacles related to participation in adult education. Most frequently they face financial- and time-related barriers that prevent them from participating (Livingstone, Raykov & Stowe, 2001).
Mainstream studies of participation in adult education usually examine how various individual and demographic characteristics influence worker's participation, but they rarely consider how workers organisation, or membership in trade union and/or professional associations affects their engagement in formal education and informal work-related learning. Previous studies of the impact of union membership on participation in lifelong learning demonstrate

a significant association between worker membership status (negotiating power) and their involvement in work-related and other forms of informal learning and formal education (Livingstone & Raykov. 2008; Raykov & Livingstone, 2014). The current study is focused on the exploration of the impact that membership in trade union and professional associations has on employees' participation in work-related informal learning.

This study is based on data from a recent Canadian survey (Livingstone & Raykov, 2017). The study also makes use of the available data from the UK Skills and Employment Surveys (Felstead et al., 2014) and official Eurostat data related to participation in adult education. Statistical analysis includes descriptive and inferential techniques as well as multivariate regression analysis (Hosmer, Lemeshow & Sturdivant, 2013).

Results from the Canadian survey demonstrate that members of labour unions and professional associations more frequently learn informally about different work-related topics and significantly more frequently participate in part-time but less often in full-time formal education. Multiple logistic regressions based on data from the UK Surveys show that in organisations where union or staff associations exist, workers more often have written career or training plans, that union members more often than other workers have written plans, and that they more often are supported by their unions to take up training.

The study provides evidence that supports the central argument of this study that declining negotiating power of working people, as a consequence of rapidly decreasing union density, is an important factor preventing workers' greater involvement in adult education and work-related informal learning.

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Keywords: Occupations, Jobs and Careers

Profiles of Knowledge Workers: Work Intensification, Decreasing Job Control, Growing Underemployment

This symposium examines general tendencies of working conditions in paid employment settings an advanced capitalist economy. Empirical analyses are based on national surveys of the employed Canadian labour force from 1982 to 2016, as well as 2017 surveys and in-depth interviews with Ontario nurses. Analyses by economic class find evidence of increasing proletarianization of professional employees, growing polarization of top managers from lower level managers, and growing affinity of both professional employees and lower level managers with other non-managerial workers. More focused analyses of nurses provide both clarifications and refinements of these general trends.

Presentations of the Symposium:

The Development of General Intellect and Increasing Underemployment in Advanced Capitalist 'Knowledge Economies': Exploring the Contradiction
D.W. Livingstone (University of Toronto, Canada)

This paper addresses the contradiction between the development of the general intellect of the available labour force in advanced capitalist economies and the underemployment of this labour force in workplaces as currently constructed. On one hand, we have rapid recent growth of participation in advanced formal education, explosive use of digital media to share useful information collectively, and continuing pervasive engagement in informal work-related learning. This evidence points to labour force with an unprecedented level of collective knowledge (general Intellect) to design, coordinate and maintain increasingly interdependent science-based labour processes. Conversely, the increasing concentration and centralization of ownership and control of production in trans-national private corporations and the weakening of the traditional organized labour movement, with globalizing labour supply chains, growing routinization and automation of both mental and manual labour, and increasing intensification and precariousness of working conditions, narrow the opportunities for a growing proportion of this labour force to utilize their qualifications and knowledge in commensurate jobs. Even the most highly qualified professional employee 'knowledge workers' find themselves increasingly overqualified and underemployed. Implications of current patterns of working conditions are considered in terms of more effective utilization of the capacities of the current and potential future labour force.

Trajectories of Learning within the Non-Orthodox Proletarianization of Nursing in Ontario
Peter Sawchuk (University of Toronto, Canada)

Financial pressures continue to impact health care labour/learning processes involving professional nursing care work in many countries. In Ontario, there is growing empirical evidence that professional nursing practice, learning, knowledge and judgement-making in occupational life are undergoing severe alterations as new technologies, more complex divisions of labour and work management systems continue to change. These alterations are documented in a recent survey of Ontario Registered Nurses (n=1326), in depth interviews (n=58) and selective occupational life history interview (n=8). Drawing on a Cultural Historical Activity Theory (CHAT) and Labour Process Theory (LPT) analyses discussions of the forces of non-"orthodox proletarianization" (cf. Derber 1983, p.311) within Ontario nursing work are introduced. Of particular interest are effects of new technologies mediating nursing practice as well as labour process types or models of care. Insights into professional work, practice and learning, as well as gendered-professionalism in nursing learning dynamics will be provided.

Commentator: Alison Fuller (University College London, UK)

Comments on papers 1 and 2 in this symposium

Lizier, Amanda L.

University of Technology Sydney, Australia

Keywords: complexity, workplace learning, fluid work

Re-considering the nature of work in complex adaptive organisations – Fluid work as a driver of learning through work

Changes to work and increased complexity is placing demands on professionals to learn and adapt in increasingly uncertain and unstable workforces. The nature of work has fundamentally changed, shaped by innovations in technology and shifts 'towards a sector of high-quality services within highly developed economies' (Harteis, Rausch, & Seifried, 2014, p. 2). The result is a rapidly changing environment which requires professionals to be far more flexible and adaptable than previously (Cairns & Malloch, 2011; Hiniker & Putnam, 2009).

Investigating learning in changing and uncertain contexts requires an approach which encompasses the nature of a professional's work and how this influences their learning. Complex adaptive systems theory is increasingly being used as a lens through which to make sense of work and learning in contexts of uncertainty and instability (see Fenwick, 2012; Lizier, 2017).

This paper presents findings from a study designed to investigate professionals' experiences of work and learning in complex adaptive organisations (Lizier, 2017). The study used an adapted phenomenographic approach and the complex adaptive systems conceptual framework (Lizier, 2017) to analyse data from semi-structured interviews with fourteen professionals from a variety of organisations and industry sectors within Australia. This paper focuses on a particular aspect of the findings, namely how organisational complexity shapes the nature of work, influenced by varying degrees of emergence, adaptation, complex social networks, and agency. The findings highlight that work in complex adaptive organisations is best described as fluid work. Further, the greater the degree of work fluidity, the greater the need for professionals to learn through work. The findings suggest that it is fluid work which drives a need for flexible learning approaches and adaptable learners in contemporary organisations. The paper concludes with a discussion of how using a complex adaptive systems approach and a focus on the fluidity of work provides a fruitful way to investigate experiences of work and learning for professionals.

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Workshop 14

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Keywords: complexity, workplace learning, fluid work, structured work

"If you're not in the classroom, you're not learning": Workplace learning and structured learning and development systems and practices in complex adaptive organisations

Despite the decades of research on workplace learning confirming that professionals learn through work, organisational learning and development systems and practices have not shifted to recognise or facilitate this learning. This learning through work is often invisible within organisations and "formal' or structured learning is privileged (Berg & Chyung, 2008). A common trend in contemporary organisations has been to build structured learning into business processes such as quality frameworks (for example, ISO9000, QS 9000, or ISO14000 standards) (Hiniker & Putnam, 2009). Structured learning is also emphasised within continuing professional education frameworks, basing learning and development systems and practices on outdated assumptions about learning where learning at and for work is considered a psychological process of acquisition and transfer (Reich, Rooney, & Boud, 2015).

This paper presents findings from an interview-based study of professionals across a variety of organisations and industry sectors in Australia which investigated professionals' experiences of work and learning in complex adaptive organisations. Key to the study was considering organisations through the lens of the complex adaptive systems conceptual framework (Lizier, 2017) which provided a robust way in which to investigate experiences of learning in contemporary organisations beset by uncertainty and increasing rates of change. The focus of this paper is on a particular aspect of the study's findings which identified that despite the organisations studied espousing support for learning through work, for example through the popular 70:20:0 model (McCall, Lombardo, & Morrison, 1988), learning and

development systems and practices were still largely oriented towards formality and structure. While the professionals interviewed described learning and adapting through engaging in "fluid work", the learning and development systems and practices described (e.g. training calendars, personal development plans, online learning portals) appear to sustain assumptions about learning as a product to be acquired and transferred, highlighting psychological assumptions about learning at work (Hager & Hodkinson, 2009). The implications of this study suggest that the focus for understanding and reforming learning and development systems and practices in complex adaptive organisations needs to shift away from structure and measurement, towards approaches that consider the interplay of organisational complexity, fluidity of work, and experiences of learning primarily through work.

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Workshop 10

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Work in the Digital Age: More Complexity, More Training? Firm-Level Evidence from Germany

The digital transformation of our economy largely affects the way we work. While new jobs emerge, some jobs undergo major changes or even perish. Technological change within occupations can be observed by analyzing the tasks performed at the workplace. Whereas routine tasks are susceptible to automation, the remaining tasks gain in complexity. In

consequence, many jobs show a rise in qualification and work requirements. This paper focuses on two aspects. Firstly, we want to investigate if firms' level of digitization effects the amount of employer-provided training. Because employees need to learn how to handle new technologies, it is expected that more use of technologies leads to more training. Secondly, we seek to show how job tasks performed by employees affect their participation in employer-provided training. The idea is that firms invest in their employees by providing them with the skills necessary to meet the demands for performing their specific jobs tasks.

Many empirical studies in the field of adult education have shown that access to employer-provided training strongly depends on the educational level of individuals. Accordingly, participation in employer-provided training increases with higher levels of formal education of employees, the so-called "matthew effect". One reason for this is that firms are more likely to invest in training measures for high-skilled employees because they expect higher returns. However, several studies that focus on the job tasks of different employee groups have shown that differences in the training participation do not only exist between different skill-groups but also between employees performing routine versus non-routine/complex tasks. Evidence suggests that – even though low-skilled employees receive less training in general – execution of demanding tasks and a high digitization level of the firm increase low-skilled employees' participation in further training. Hence, we expect two effects:

1) Firms with a higher level of technology use provide more training to their employees independent of their initial qualification.

2) Firms are more likely to provide training if the job profiles are characterized by a high proportion of complex tasks.

For the analysis, a fractional logit model is applied. As dependent variable, the share of employees (distinguished by three groups: employees performing simple/qualified/highly qualified tasks) participating in employer-provided training is observed. Independent variables of the model are a firm's level of digitization and employees' tasks. A firm's level of digitization is determined by a linear index consisting on the number of digital technologies used. By conducting a factor analysis on employees' task profiles for each of the three employee groups, we identify three underlying factors: (1) cognitive/interactive tasks, (2) routine tasks and (3) manual tasks, which are subsequently used in the model.

Our results support the expected positive correlation between the level of digitization in firms and the share of employees participating in employer-provided training. In addition to that, the participation rate of employees in training increases with a frequent performance of complex tasks. Although, employees performing simple tasks undergo less training in general, this correlation can be observed for all the three groups of employees.

Margaryan, Anoush

University of West London, United Kingdom

The relationship between the nature of tasks and workplace learning practices in crowdwork

This paper examines the relationships between the nature of tasks in crowdwork platforms and the workplace learning activities undertaken by crowdworkers who perform these tasks. Crowdwork is an emergent form of digital labour in which a large number of people from across the world are brought together through online platforms to carry out tasks for pay. Despite the growth in the uptake of crowdwork across the world, the nature of work and the workers' learning practices within these online labour platforms are poorly understood. Whilst there has been limited research on the nature of work tasks and the workplace learning activities within crowdwork platforms, the potential interrelationship between the two – crowdwork tasks and workplace learning activities- has not been researched to date. In this paper we draw on a questionnaire survey of 182 crowdworkers from two leading platforms (Upwork and CrowdFlower) to, first, scope their characterisations of the nature of the crowdwork tasks they perform and identify the workplace learning activities they undertake on the platforms, and second, to analyse how the work tasks and workplace learning activities correlate. The nature of work tasks is measured on a scale of 15 dimensions ranging from routine, repetitive and low-discretion work to high-agency, expert-based work that requires variety of complex skills. The workplace learning activities include 14 different types of individual and collective, as well as formal and informal learning activities such as self-study of professional literature, seeking feedback from peers, attending training courses or learning through trial and error. The analysis revealed a 6-cluster typology of crowdwork tasks: (i) complex, highly-skilled; (ii)collaborative, integrative; (iii) low-discretion; (iv) rule-based, standardised; (v) high-agency, expertise-based; and (vi) routine. The analysis of the relationships between the task typology and workplace learning activities suggests that, first, crowdworkers who characterised their tasks as predominantly complex and highly-skilled were more likely to learn by trial-and-error and by observing and seeking advice from others. Second, crowdworkers who characterised their tasks as collaborative and integrative were more likely to learn by following new developments in their field, by attending workshops and taking free online courses, by collaborating with and seeking feedback from others. Third, crowdworkers who characterised their platform tasks as low-discretion and repetitive were more likely to learn through trial and error by working alone on tasks, but less likely to learn by performing novel tasks, less likely to attend workshops, take online courses and tutorials or self-study professional literature and less likely to seek feedback from peers. Fourth, crowdworkers who characterised their tasks as rule-based/standardised did not report any learning activities that were statistically significantly different from those reported by other workers. Fifth, crowdworkers who described their tasks as high-agency and expertise-based were more likely to learn by self-study searching for new information online. Finally, crowdworkers who characterised their tasks as mostly routine were also more likely to learn primarily by self-study. We conclude the paper by discussing the implications of our findings

for workplace learning and task design in crowdwork platforms and proposing directions for future research.

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Keywords: Safety, Culture, Informal Learning, Leadership, Workplace Learning, Adult Education

EDUCATING SAFETY: CULTURE, LEADERSHIP, AND LEARNING: A CRITICAL DISCOURSE ANALYSIS

The Association of Workers Compensation Boards of Canada statistics remind us that since 1993, approximately 1000 workers have been killed on the job every year in Canada (AWCBC, 2018). In circumstances involving multiple casualties, major incident reports are produced to guide future decision making, as well as advance industry regulation and oversight. More importantly, these reports suggest how industries and corporations need to move forward on worker education, learning, and safety generally. But what do they actually 'say?' And what differences might it make to worksplace education and leadership practice? While this question is significant, few studies focus on these worker/labour education implications. Using critical discourse and content analysis, I begin to fill this gap. I conducted a study that explored, in depth, one of these major accident reports – The Report of the BP U.S. Refineries Independent Safety Review Panel (2007) – written in response to the 2005 BP Texas City Refinery accident that killed 15 workers and injured another 170 people .

The way in which post-incident analysis reports interpret and deploy concepts and ideas of culture, leadership, education and learning can tell us something important. Many safety scholars (e.g. Zohar, 1980; Geller, 1994; Reason, 1998; Hale, 2000; Hopkins, 2005), acknowledge a connection between safety performance and workplace culture. In particular, they argue that safety needs to be explored in relationship to culture (i.e., to create a 'safety culture'). It is the culture of a workplace, many suggest, that governs if, when, and how safety, as a value priority, is learned and applied. Silbey, 2009, however, suggests "culture..cannot be instrumentalized to prevent technological accidents" (p. 341) and that more needs to be understood. One idea is that is workers learn informally to value safety from leaders in the workplace community - role models and mentors who function as values nexuses (Marsick & Watkins, 1990; Cofer, 2000; Schugerensky, 2000; Werquin, 2007). However, hierarchical organizations and mechanical regulatory systems too often create hierarchical power structures (Forsyth, 2009) that alienate and oppress workers (Freire, 1970), impeding community relationships and knowledge transmission, suppressing informal learning praxis (Eraut, 2004). Adult educators (Mezirow, 1997; Spencer, 2006) argue that workers need to have agency and power over their own learning.

Four important findings emerged from my study. Firstly, the report perpetuates a problematic interpretation of the concept of 'culture' and its relationship to safety and therefore its

recommendations are ineffective or inappropriate. Secondly, it re-enforces the misguided perspective that hierachical organization and top down leadership will strengthen and grow a culture that values safety. Thirdly, although the report highlights a a lack of investment in training, it places too much emphasis on performance based learning (job tasks) and technology driven learning. Fourthly, it demonstrates a significant lack of understanding of informal learning, mentoring, and adult education. The finding of this study overall was that this accident report, despite some efforts to address the issues, predominantly perpetuates normative ideas of education, leadership and control that dismiss workers' knowledges and is unlikely to bring about fundamental change.

Workshop 22

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Keywords: professional studies, integration of theory and practice, social interaction, learning situations, higher education

Integrating theory and practice – Reconstructing interactions in university continuing education

Learning as social endeavour, embracing both individual learning and learning with and from others, requires a relation between the involved actors. The study at hand focuses on the manifold interactions between the involved actors within university continuing education programmes. It reconstructs learning as interactions between students and various actors (classmates, teachers, co-workers, clients, superiors, and friends/family) and considers formal and informal settings. The results show the relevance of workplace and informal spaces for learning. It also addresses aspects of self-directed learning, as students consciously use informal settings for learning in the context of their studies. Hence, the research contributes to a better understanding of professional learning situations within higher education by showing how social interactions are constructed and performed.

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Keywords: continuing education, digitization, worked-placed learning

How do new technologies affect learning in companies? Challenges for continuing vocational training in the world of work 4.0 - the companies' point of view

Companies have to react to new technological, organisational and market-related changes. Especially digitization is currently changing work contents and processes. Within the framework of a CVTS supplementary survey, we are focusing the following research questions for German companies:

Which competences are required in digitized forms of work, what is new or different?

How do these needs and new technologies affect learning (formal, informal and non-formal) in companies?

How and for what reason do companies support such learning processes? What incentives or obstacles do the various actors see in these forms of learning?

Database:

The fifth European Continuing Vocational Training Survey (CVTS) collected comparable data on continuing vocational training activities in enterprises for the EU Member States in 2015. In Germany, the Federal Statistical Office surveyed 2,846 enterprises with ten or more employees, focussing on the private sector (cf. Federal Statistical Office 2017).

BIBB has supplemented this survey with a two-tier national study funded by the Federal Ministry of Education and Research.

Step one: In spring 2018, we surveyed 270 continuing vocational training enterprises that had already taken part in the main survey. The sematic focus was on work-placed learning in the world of work 4.0. The results are weighted according to company size and sector.

The evaluations of the standardised survey initially provide an overview of changes in the field of "learning in the workplace", such as changing requirements for employees and new forms of learning and learning media in companies. In seven out of ten enterprises, work processes will change considerably. This also applies to a similar extent to learning content. For 81% of enterprises, digitization changes the current or future need for knowledge and skills.

Step two: In a second step of the survey we are currently conducting in-depth case studies to deepen the results of step one and to take up new aspects. The aim is to obtain a closed picture of the practice of continuing learning. Until the end of 2019, we want to have carried

out 12 of those. To match the heterogeneity of this field we use the contrasting sampling method. Therefore, companies are varying with regard to size, sector/branch, region and the significance of digital technologies for the company. We carry out semi-structured interviews with employees belonging to the following groups: HR managers / heads of training departments / owners, persons responsible for continuing training and employee representatives.

So far, we have conducted case studies in four companies in the following sectors:

Energy, transport, IT and logistics. It is becoming apparent that informal learning and learning in the process of work become more important due to the technical possibilities. The case studies make it possible to take a close look at these changes and to analyse the decision-making processes in the company that influence these changes.

Ollis, Tracey

Deakin University, Australia

Practice, habitus, incidental and informal adult learning in the Coal Seam Gas protests in Australia.

Recently, Victoria became the first Australian state to ban fracking. This significant legislative outcome, could not have been achieved without the concerted campaigning of activists through the Lock The Gate Alliance (LTGA) in Central Gippsland. This paper outlines adult learning in the space of an important campaign against mining for coal seam gas. I claim the practices of protesters' enable an effective 'ecological habitus', as they informally learn from each other in the site of the campaign. The campaign is mainly comprised of circumstantial activists who have come together due to the serious threat from fracking to the quality of their land and water supply, who have been aided by a small number of experienced activists and resources of the international Environmental Non-Government Organisation (ENGO), Friends of the Earth (FOE). This qualitative case study research outlines data from in-depth interviews with protestors, and their knowledge and skill development as they learn from one another in the LTGA. It draws on the writing of the French philosopher Pierre Bourdieu on 'practice' to interpret the data. I claim activists develop a feel for the game of activism through socialisation with experienced activists from the LTGA. These experienced activists resource the coalition and provide informal education and workshops to the protestors. Of note is the suspension of the doxa of antipathy towards 'greenies' and radical environmentalists as the newcomer protestors learn to work cohesively together. The campaigners manage to build an ecological habitus and a successful one too. This coalition of activists has become a key force in preventing mining for Coal Seam Gas in Australia

Ollis, Tracey; Ryan, Cheryl

Deakin University, Australia

Skilling a workforce - community development practices in Neighborhood Houses in Australia: "There is so much that sits behind the doing of it"

Neighbourhood Houses and Centres are located across Australia, with the majority of houses in Victoria and New South Wales. Neighbourhood Houses started in the 1960s and 1970s and their practices were informed by feminism and the women's movement with a focus on anti-oppressive practice, advocacy and empowerment of women. The Neighbourhood Houses have a commitment to social justice processes and community development. They provide local community-based adult education and community services in response to the dynamic nature of local community needs. Formal learning occurs through pre-accredited and accredited programs, with informal or incidental learning occurring through the activities and socialisation within the houses.

The understanding and practice of community development varies throughout the Neighbourhood House workforce. In part, this is due to the diversity of qualifications of workers and managers (e.g., community development, social work, business and administration). Also at play are the impacts of neoliberalism (e.g., market-based solutions to community need, primacy of the individual, adoption of business models), along with the discourses of managerialism, raising tensions and contradictions with the philosophy and practice of community development.

In 2018, Neighbourhood Houses Victoria commenced a program of training the workforce with qualifications that aim to build expertise in community development across the sector. This papers draws on selected data from the first phase of the Social Outcomes Focused Learning and Development project which focused on developing case studies of professional learning in governance and community development.

Piercy-Cameron, Gemma

University of Waikato, New Zealand

Craft pedagogies: Service workers as teachers

Food pedagogies provide endless opportunities for learning in everyday life. These informal learning contexts can include incidental as well as purposeful learning. The purpose of this paper is to explore the informal but purposeful teaching and learning that may occur between service workers in elite craft contexts and the customers they serve. The pedagogy used is storytelling. The storytelling involves many aims, one example is inviting customers to come and identify with the culture of different craft organisation and through that identification become a regular. The storytelling can also be about revealing the skills of the service worker in their provision of elite goods such as meat, cheese, bread, wine, cocktails or coffee. Storytelling can also be about the process of decommodification providing opportunities for customers to engage in ethical or conscientious consumption as service workers seek to connect customers from farm to table or cup. The storytelling these workers engage in repositions the traditional power relations between service workers and the customers they serve. In this paper I use findings from ethnographic research in cafés and coffee roasteries as well as literature featuring empirical findings from other craft contexts to discuss the implications of this purposeful informal learning. In particular I explore the extent to which these pedagogical practices to challenge the traditional master servant relations of the service worker and customer. I also ponder the extent to which these practices offer opportunities for business owners, workers and customers to resist capitalism through decommodification and the pursuit of authenticity in connection focused elite craft work contexts.

Prescher, Thomas

Wilhelm-Löhe-Hochschule, Germany

Failure of Education for Sustainable Development in Organisations: Program Analysis using Topic Modeling to identify Organizational Patterns of a sutainability-oriented Learning Culture

ESD has been elaborated in a differentiated way and yet it is not appealing in educational practice and what has been learned is not transferred into everyday life (cf. Michelsen et al.

2013, p. 36ff.). Hence, a latent semantic analysis of qualitative data is presented using a program analysis on the subject of education for sustainable development in and by companies. Computer-aided analysis with the "MAchine Learning for LanguagE Toolkit" based on the algorithm of "latent Dirichelet allocation" (LDA) is used to trace what kind of patterns of a sustainability-oriented learning culture in contrast to the ESD can be identified.

Raykov, Milosh[1]; Taylor, Alison[2]; Scholz Fenech, Christine[3]

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Keywords: Students' work, Learning, Wellbeing, Time budget, Motivation

Researching students' term-timework, learning, and wellbeing

The proposed roundtable will provide a forum to discuss preliminary findings from studies of higher education students and work in Europe and Canada. The Canadian study examines student engagement in term-time paid work at a large research-intensive university. Findings from this single university study will be compared with those from EUROSTUDENT VI, a large-scale European survey of student work and learning, including specific results from Malta.

The primary objective of this roundtable is to compare and discuss results from countries with different higher educational systems, including different financial and academic requirements and supports. Part of this discussion, necessarily, will include the impact of the labour market and mobility on students' involvement in paid work, as well as the involvement of higher education institutions in coordinating work opportunities for students. The panel will also highlight different conceptual and methodological approaches to exploring student work and learning in order to inform ongoing and future studies in this domain.

This roundtable contributes to the theme of examining the affordances and restrictions of workplaces as sites of learning, since more and more, higher education is being called to account for the employability of graduates. This includes graduates' "job-ready" skills, but also their capacities to learn, and most importantly, their capacities to move between different learning sites in ways that facilitate their development and contribute to the larger goals of organizations. The presentations in this roundtable (described below) directly address the education-work relationship as students attempt to move between work and university studies in ways that contribute to both.

Including:

Balancing work and university studies

Alison Taylor (University of British Columbia, Canada)

Balancing work and university studies has become increasingly common in Canada. The proportion of students aged 15 to 24 engaged in paid work in 2017 was 57% (Wade, 2018). Yet there is little research that examines students' everyday transitions between university classrooms and the workplace. While there is some academic and institutional research into the intensity and features of students' term-time work, there is less research that examines the relationships between their work and their studies. This paper presents findings from an online survey of students at a large, research-intensive university in western Canada about their work and studies. Study findings provide a profile of the working student, including their motivations for working and the intensity and self-perceived working conditions. In addition, findings demonstrate how different kinds of work impacts studies for different groups of students. For example, we compare the effects of work that is integrated into studies and other work. We also attend to differences in the experiences of students who were the first in their family to attend university and international students. Our findings are expected to help inform policy discussions about how to better support working students and possible institutional change.

Combining studies and paid jobs – Findings from EUROSTUDENT VI

Christine Scholz Fenech (National Commission for Further and Higher Education (NCFHE), Malta)

The expansion of higher education in Europe and other OECD countries has been accompanied by an increased participation of students combining studies and work (Auers et al. 2007; Lewis et al. 2007; Callender 2008; Hall 2010; Lowe and Gayle 2016; Mercer et al. 2016; Billett et al. 2016; Sanchez-Gelabert et al. 2017). Research not only indicates an increase in the share of students working alongside their studies but also an increasing time spent on paid jobs (Beerkens et al. 2011; Logan et al. 2016).

This development has raised concerns about its impact on time available for studies and consequences on students' academic achievement (Svanum and Bigatti 2006; Auers et al. 2007; Callender 2008; Miller et al. 2008; Torres et al. 2010; Richardson et al. 2014; Logan et al. 2016; Mercer et al. 2016; Burston 2017; Sanchez-Gelabert et al. 2017), on the quality of students' academic experience (Lederer et al. 2015; Lowe and Gayle 2016), stress levels and mental health (Miller et al. 2008), prolongation of studies (Tur-Sinai et al. 2017) and the likelihood of dropping out (Bozick 2007; Torres et al. 2010; Moulin et al. 2013; Hovdhaugen 2015).

Other studies have argued that combining studies and work may have a limited (Wang et al. 2010; Beerkens et al.2011; Roshchin and Rudakov 2017) or even a positive impact (Kouliavtsev 2013), depending on the work intensity and the flexibility of the job held (Body et al. 2014), that it might harness students' organisational skills (Tuononen et al. 2016) and facilitate their transition into the labour market upon graduation (Sanchez-Gelabert et al. 2017).

It is evident, therefore, that the subject of combining studies and work is contested and deserves further attention, firstly in view of the magnitude of the phenomenon (Maseviciute et al. 2018, Hauschildt et al. 2018) and secondly, due to the heterogeneity of this group of students. Data from EUROSTUDENT, which examines the social and economic conditions of student life in higher education systems across Europe, can provide insights in this regard. Data from the sixth round of EUROSTUDENT, which was carried out in 2016 with 28 participating countries and sheds light on the conditions of

students working alongside their studies, will serve as basis for the analysis. It will explore the age and gender profile of working students, the extent of, reliance on and motives for employment. It will also explore the impact of employment on students' budgets, their time spent on studies and work and their satisfaction with the time budget.

Widening Access to Higher Education for Working Students

Christine Scholz Fenech[1], Milosh Raykov[1]
([1]National Commission for Further and Higher Education (NCFHE), Malta, [2]University of Malta, Malta)

Policymakers have recognised the significance of higher education for the individual's social, economic and personal development. While the social dimension of education in the Bologna Process emphasises the need for widening access to education, at the EU level it has received renewed interest in recent years, with a focus on increasing higher education attainment and the new skills agenda. Research shows that access to higher education remains highly selective and that the expansion of higher education in European and other OECD countries is characterized by increased student participation in the labour force during the time of studies. This development has attracted much interest in research on the impact of students' paid work on their academic and employment outcomes. Following up on this research, this paper presents results from the 2016 EUROSTUDENT VI survey conducted in Malta (N = 1423), which describes the profile and experience of working students in Malta. It aims to increase awareness of this issue and to identify possible policy measures to address the challenges encountered by this group of students.

Students' motivation for term-timework & self-reported consequences of this involvement

Milosh Raykov (University of Malta, Malta)

A large and steadily increasing number of students in higher education institutions are involved in paid work during the school year as well as during holiday breaks while studying (Quintini ,2015; Zeidler, 2017). Several recent studies also indicate that an increasing number of students experience mental health-related problems (see Beiter, et al, 2015). However, research findings in this domain are inconsistent regarding the academic and career-related outcomes as well as regarding the impact of paid work on students' mental health and wellbeing. This study explores how the intensity and the type of work as well as sociodemographic characteristic influence students' involvement in paid work and the consequences of this involvement.

This paper is based on data from the first cycle of the Student Work and Learning survey conducted in 2018 at a large Canadian research-intensive university and some comparisons with data from the EUROSTUDENT survey conducted in 2016 in most of the EU countries. The analysis includes a basic description, factorisation of a scale that examines student motivation for term-time work, as well as logistic regression of nominal variables related to student work, learning and their sociodemographic characteristics.

Our analysis shows that several factors influence students' involvement in term-time paid work, but a comprehensive analysis of the numerical data and open-ended responses shows that student motivation is mainly influenced by their financial needs, their intention to develop social networks and

gain work experience as well as by the desire to improve their standard of living by increasing personal disposable income.

The study also finds significant associations between the intensity of term-time work, students' self-reported financial stress, and lower academic achievement. The study further found that participants involved in work-integrated learning report considerably better outcomes of term-time work than students involved in paid work which is not related to their program of study. In addition to the presentation of our research findings, the roundtable discussion will also focus on conceptual approaches and methodological solutions for researching student work and learning. Associations between students' term-time work and stress will be discussed from a neo-material and critical realist perspective.

Bromfield, Sheldon Matthew

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Labouring Through Unused Skills: Reframing Sennett in the Labour Process Theory

In the knowledge economy, skills are a misnomer; they are quickly extinguished and ignited through the development of technology and the organization and reorganization of work. Skills, therefore, are subject to the needs of production/market and are transient. In service-based occupations, many skills are tacit and appear as matters of energetic, adaptive and positive dispositions, rather than actual competencies as such. Employers tend to consider service-oriented qualities as soft skills or social skills. Skills are subsumed within paid labour; the skills workers use and develop are predominantly determined by employers vis-à-vis the labour process. As a result, a worker can develop an existential conflict that is rooted in a domain where skills are a human possession but are determined as valuable by exogenous forces in a demand and supply labour market. Moreover, workers are often forced to make crucial decisions regarding training and development when their skills are considered obsolete. Workers consistently upgrade skills in an effort to protect themselves against obsolescence. However, becoming overqualified can result in unused skills, as employers may not appropriate the full skills set of a worker or workers may encounter a skills-job mismatch. Existing skills that are unused can become lost, invisible and obsolete. An important point of departure for this paper is what Richard Sennett offers in his analysis of this process as skills extinction, which involves the usefulness of skills and their limited durability within contemporary capitalist society. Like a perishable commodity, arguably, some skills have shelf-life; albeit with indeterminate expiration dates. Skills extinction can result in alienation, exploitation, limited job fulfilment, precariousness, identity conflict, feelings of inadequacy and a tireless pursuit of knowledge acquisition and skills upgrading to remain relevant and employable. This paper explores these issues in problematizing the current landscape of the

skills-economy. Combining Labour Process Theory (LPT) with Sennett's theorization of the accretion of experiences towards skills mastery, this paper focuses on the contested concept of skills formation and positions the deskilling/upskilling discourse against a more contemporary argument involving the ramifications of unused skills and the invisibilization of skills through to extinction. The paper also evaluates the role of government as a possible solution to the skills extinction predicament.

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Conceptualization of needs research in the context of digitization of work and training-concepts

The paper thematizes approaches and results of the ESF-joint-project "FachWerk". With changes of work structures in the craft sector through the use of digital technologies, an increasing need for qualification can be observed. Since work in the craft trades is characterized by a high proportion of manual, non-automatable and experience-based activities, digital technologies will have a different impact on work than in knowledge-intensive occupations (Picot/Neuburger, 2013, Schwemmle/Wedde, 2012). Changes in working structures create needs for further training, which results from the discrepancy between existing (actual status) and required competences (target status). In addition, requirements can indicate already existing skills gaps (current need) and those that arise, e.g. as a result of technical changes in companies (anticipatory need) (Merk 1998). The aim is to develop a learning-arrangement through a comprehensive survey of needs in craft enterprises (Zalenska 2009).

Different methods (eg. Diekmann 2011) such as analyzes of internal documents, participant observations, guided interviews and analyzes of job advertisements are used to assess needs. This multi-perspective view is necessary because of the complexity of the research subject of working activities. Furthermore, potential changes due to technological change, which have an impact on the craft sectors, must be identified. Since digitization in craft enterprises has progressed at different stages, a forward-looking need has to be made in the form of a target-target comparison (Merk 1998). Activity-profiles of current tasks are created for this purpose. These record the description of all activities up to the detailed realization. Forward-looking forecasts of changes in activities are based on identified technological trends in the craft trades. These trends, in conjunction with current activities, outline digital scenarios of change for craft companies.

As a result of the evaluation of the activity profiles, four main subject matters were identified, which are related to the mentioned technology trends. These matters are taken into account as training requirements in the realization of the learning-arrangement:

- Server/Cloud-Systems

- Digital documentmanagement

- Use of media/media criticism

- Privacy Law/data security

In addition, didactic principles are deduced from empirical datas, which serve as the basis for the conception of the learning-arrangement. From the didactic principles, action recommendations for digital implementation options are also deviated.

Following the assesment of needs, the conceptual design of the learning-arrangement takes place in cooperation with partners. Further questions of research can be seen in aspects of sustainability. For example, the question of how the implemented learning-arrangements in craft enterprises evolve after the end of the project or how they continue to be pursued. Furthermore, it is possible to investigate whether sustainable and effective knowledge development can be recorded in craft enterprises and to what extent aspects of competence development and self-regulation in learning find a place in the daily work of craft enterprises.

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Principals' Appropriation of Public Private Partnership in Education in the Senior High School Program

The implementation of the Senior High School program in the Philippines reflects the state's response to the changing landscape of the global market economy. Its salient features focus on the additional two year-senior high school program which highlights the development of middle level skills for national development and global competitiveness. To implement the program, the state entered into collaboration with the private schools which is commonly known as Public Private Partnership (PPP). In this collaboration, the government provides the guidelines and financing while the private educational institutions provide the academic service. Drawn from socio-cultural approach to policy making as a theoretical lens, this study looked into the impacts of neoliberal approach and how it was appropriated by the principals in practice. Specifically, such appropriation reflects their understanding of the purpose of education and consequently shaping their roles and management styles. Results showed that principal appropriation explicitly and implicitly reproduce the neoliberal agenda and the instrumental function of education in the senior high school program.

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Site of the 'slash': in-between learning spaces as a fruitful focus for further research

While learning in and for work has attracted much attention over the past three decades, most studies typically focus on what happens at work or in training rooms. Studies generally (explicitly of otherwise) use binaries like formal/informal; working/learning etc to mark out their particular research interests. Central to these binaries is the slash: a seemingly innocuous punctuation mark. Yet, this slash is a rather versatile device that has multiple usages: including to represent contestation between two ideas: e.g. nature/nurture (Penn ny).

Accepting the (also popular) use of an en dash (or hyphen) to perform a similar function (Fine 1994), as in 'worker-learner', this paper proposes that the slash is an important placeholder for investigating work and learning. To do this, it explores the spaces represented by the slash

in conceptual binaries like: working/non-working; formal/informal; or working/learning as well as by the physical spaces of work/not-work. Following Phil Hodkinson (2005) who troubled straightforward notions of the formal/informal binary, as well as building on Solomon et al. (2008)'s work, the paper refers to the sites represented by the slash as 'in-between' learning spaces.

Deploying a secondary analysis of several Australian studies, the paper illustrates a number of these in-between learning spaces. Drawing on sociomaterial theorisations, it argues that these spaces are formed and reformed by workers, as much as they form and reform workers and work. The aim of the paper is to draw attention to the multiple forms of in-between learning spaces, as well as to mark 'the slash' as a fruitful focus to ask new questions about workplace learning.

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Lessons learned. Configuring Innovation Labs as Spaces for Intrapreneurial Learning within Hybrid Organizations

This article deals with the following question "How is learning supported within innovation labs and what are its impeding factors?". A cross-section of three studies already carried out on innovation labs will be drawn to answer to this question.

Innovation Labs create a specific setting for learning in the context of workplace for their participants. The goal of the researched innovation labs is the development of entrepreneurial education of the participating social intrapreneurs, which are mainly employees of different

social enterprises. They get to know an innovative combination of methods to foster social innovation through an open innovation process. The author points out three success factors for intrapreneurial learning, which are the lab process and methods used, the collaboration of the participants for an open innovation process and the involvement of the organisations who sent their employees.

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Keywords: workplace learning, learning culture, learning culture in workplace

A typological look into learning culture in workplaces: from malicious to demanding!

Due to rapid rate of change in technology and science, workplaces have been turned into a vital hub for learning and development. So no enterprise can have a claim to progress before it takes into account continuous improvement of human resources and adopt well-organized plans to foster a positive learning culture. To meet this purpose, companies should initially recognize their current learning culture to become able to design amenable strategies for improving workplace learning. Hence, this study aimed at identifying learning cultures in various workplaces thorough an emergent grounded theory study. To gather data, in-depth interviews were conducted on 127 employees of small to large companies to reach a vast breadth and depth of data. For purpose of inclusiveness, a maximum variation strategy was adopted for sampling to select participants purposively from manufacturing, knowledge-based, business and service companies. The data were thematically analyzed at two levels, namely initial and secondary coding. To establish credibility, three dominant strategies were continuously used as member check, peer debriefing and external auditing. Consequently, a tripartite typology emerged to represent learning culture in various enterprises based on three criteria: management approach, peers' reaction, promotion expectancy. To sum up, in malicious learning culture, bad working habits are learned and shared by staff and commitment to work is gradually minimized to its lowest possible point. In deterministic learning culture, a neutral learning climate dominates the workplace as staffs perceive no link between self-development and job promotion. Finally, in demanding learning culture people may clearly view sensible link between competency development and job promotion, so they try their utmost to keep up with the latest developments in their field to avert the risk of demotion or job loss. The study suggests that if enterprises plan to achieve and keep a competitive edge, they should focus firmly on creating a demanding workplace learning culture.

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Keywords: workplace learning, learning theories, Chat, Experience, mimesis

Exploring convergence and differences in theorizing learning in, for, and with work Continued from RWL10.

This symposium will deal with the theorizing in, for, and with work, and it will continue a discussion at RWL10 explorinig which differences these contextualisations possibly entail. It apply a broad understanding of learning including both intentional organized learning activities and the learning of everyday life. It will be based on a presentation of and dialogue between a number of approaches to the theorizing of learning which base their understanding in people's life experience in a broad sense.

Much mainstream research in our field is still based in either the idea that the logic of work processes and requirements seamlessly define and enable learning processes, or reversely that learning is an individual process of acquiring skills and competences which can be didactically engineered by appropriate teaching and/or management. Both fail to grasp the holistic subjective process of work and life experience and its structuring of the emotional and cognitive process of learning as an aspect of meaning making and work identification. In order to establish a more theoretical understanding it is necessary to "flip the lens" (H. Bound) from teaching to learning, and likewise to realize that work is not only a targeted technical process, but a life world in its own right. People learn while living for reasons that are not defined by set goals.

But there are also a number of approaches which seek to establish new frameworks, not defined simply by the objective work process but the subjective meaning of it, and other approaches which strive to understand the individual subject as a result of social, historical and situational circumstances. A quite broad stream of research developments have taken cultural psychology and activity theory (CHAT) as a broad framework emphasizing the historical and cultural nature of work in and for which learning may take place. Studying work in its form as independent and transferred social practices – or discourses - that have set and also enabled the learning of mastery form another important orientation. Finally a stream of research into the subjective aspects of reflecting individual and collective life experiences, formed by class, gender and ethnicities for example, have studied the subjective aspects of particular careers, occupational orientations and also political engagements. The symposium will seek to illuminate some of these approaches and facilitate a dialogue between different traditions of thought that seem to converge or overlap in many ways, yet also express different perspectives and priorities.

It is the presumption that this dialogue will involve, among others, questions like:

- How does each approach relate to work – as work process, as workplace, as form of economic exchange, as a form of socio-economic struggle, as cultural construction, and so on?
- How does each approach theorize the significance of work in individual subjects?
- How are the concepts of work identification and orientation treated?
- How are historical environments and dynamics – e.g. economic, sectoral or technological change – attended to in each approach?
- How are the requirements of work on individual level accounted for and with which concepts – e.g. knowledge, skills, competences, attitudes, habitus, and so on?
- How are inter-cultural diversities in culture and socialization and the changes of globalization attended to in each approach?
- Which concepts of collective consciousness and collective agency are included?
- What is the role of training, education and informalized learning in the development of knowledges, skills and competences?

The presenters at the symposium will contribute with a background paper on some of these issues. In the symposium each of them will give an introduction to their paper (20 minutes), and we will structure a real dialogical discussion among them, and between them and the audience.

Workshop 4

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Keywords: work identity, professionalism, wage labour, precariousness, psycho-societal approach

The Psycho-Societal Materiality of Work Identities in late modernity. Professions, vocations, wage labour, precarious employment, and corporate identification

The Psycho-Societal Materiality of Work Identities in late modernity. Professions, vocations, wage labour, precarious employment, and corporate identification

Professions and vocations are historically changing fields of formation of human subjectivity in the form of collective (work) identities. This paper raises the questions: Are collective professional and vocational identities fading away or being regenerated in new forms when the material work process changes? How are these identities constituted and materialized?

Generally professions are seen as constituted by knowledge domains which enable rational practice. Recently increased attention is being drawn to the significance of material aspects of social practice in resonance with a pragmatic and performative notion of knowledge, focussing on professional practices, ie work procedures addressing concrete societal needs under specific material circumstances. It relativizes the rationalistic self-definition of profession(al)s and draws attention to the physical environment in terms of space, tools and technologies of professional work.

I want to elaborate another dimension of materiality, namely the bodily and emotional involvement of the professionals in the work process and its physical and social relations. The learning of new professionals and the embodying of the physical and social forms of professional work practices represent a material continuation and reformation of professional practice.

Different traditions of sociological thinking entail corresponding conceptions of professional identities: as "economic men" forming labour market monopolies or as individuals characterized by altruism, committed to the general wellbeing of clients, patients etc.based on social functionalism.

My idea is that understanding professionals through a material notion of the subject may grasp the complex relation between societal structure and (work) subjectivity in a better way. This model has proved helpful in analysing professional identity and learning, based on life history research, in several classical as well as emerging professions (engineers, general practitioners (doctors), nurses, teachers etc) on their professional career, their present job, and their ideas about their own future development. The point is that professionalism is (also) a bodily socialisation, building on individual life experience and developing in a nexus with the social practices and discourses of the profession. The professionals represent a material reality, which at the same time embody the competences and requires the professional knowledge and practices as a collective shield against the challenges of their work.

This has also more far implications for the understanding of the relation between work and (socialist) politics. Professions have been specialized and privileged groups in the modernization process, and have formed collective identities around their particular knowledge. What will happen with collective identities related to specific work domains in the context of a permanent pressure on the worker for flexibility and adaptation to changing work conditions? Will they increasingly develop wage labour attitudes, detaching from their professional identification? Or will they seek different/new identities? Contemporary management seeks to promote corporate identity, the identification of workers with their workplace and employer? How will precarious employment influence work identities?

Workshop 7

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Keywords: sectors and labor markets, knowledge, competences, qualifications and needs

Effects of workplace-oriented basic adult education trainings: Addressing employee's competencies across sectors

The paper focuses effects of workplace-oriented basic adult education trainings across sectors. As such automotive industry, transport and logistics, the social economy, the aviation industry and temporary personnel agencies are under scrutiny. It is based on a broader

research project (ABAG2) funded by the German Federal Ministry of Education and Research and examines the acquisition of competencies through workplace-related trainings.

All in all 50 trainings and 304 participants are considered within the study. The survey draws on a self-assessment of the participants at the end of the respective trainings and differentiates professional competence, methodological competence, social competence and self-competence. These competencies are not only considered crucial by the European Union (2018) for the personal fulfilment, participation on the labour market and social participation, but are also based upon a continuing scientific discourse (Roth 1971; Maurer 2006; Trautwein 2011) with references to Klippert's (1994) extended learning concept. What is more, individual preferences, satisfaction with the work situation and satisfaction with the trainings are also referred to within the survey.

Next to common descriptive and bi-variate analysis, the research on the effects of competencies is based on methods which are assigned to the area of robust statistics (Huber 1981). The methods of robust statistics consider the non-normally distributed response behavior which is to be anticipated in surveys on heterogeneous target groups. As a consequence, the data can be compared across sectors and highlight differences between participants.

What is more, the findings of the study allow for conclusions regarding the anticipated effects of training for employees in different sectors and thus are of high relevance for employers.

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Learner perspectives on "theory" and "practice" in Work-based Learning within Higher Education

Ongoing discussions about the academicisation of vocational education and training and the simultaneous vocationalisation of higher education (HE) programmes in German-speaking countries (Rauner, 2012) go hand in hand with an increasing diversification of study programmes (part-time studies, dual study programmes). This is contrasted by a discussion on fair crediting work related experience for academic achievements. From the learners point of view the relationship between experience, work based learning (WBL) and HE often remains reduced to the relationship between "theory" in HE and "practice" as internship sometimes as WBL. The range of WBL shows approaches that often are based within disciplines (health, engineering, …) or also being aligned to corporate roles within companies or organisations. (Gibbs & Garnett, 2007) Accordingly, a transdisciplinary approach could provide an opportunity to develop a theoretical framework for a common understanding of knowledge and to facilitate the transfer between WBL and HE. (Gibbs, 2015). But even in transdisciplinary contexts, concepts of epistemé (know that) and techné (know how) are often considered with high weight. And so although in ancient thought the most important of the intellectual virtues - phronesis as the ability to act appropriately in a concrete individual cases, taking into account all factors, objectives and insights relevant to the situation that the actor may know, is neglected. (Flyvbjerg, Schram, & Landman, 2012). And so rarely an overarching epistemic justification of theoretical knowledge and WBL is given. It was Dewey who already made a proposal in 1938, from a research-theoretical perspective, that does not establish separate spheres of social practice, but provides an integrated approach. He assumes that common sense and scientific inquiry do not represent substantially different forms of world access, but have a common core in the form of problem solving that show a difference only in the abstraction and formalization of language. (Dewey LW, p. 66ff). On the basis of two accompanying studies both carried out in 2018 (1) on the compatibility of studies with simultaneous professional activity (relevant and not related to the subject) (University Klagenfurt, Austria) and (2) the evaluation of a newly implemented dual HE programme (University of Applied Sciences in Vienna) we will investigate, whether indications for this view can be found and whether differences between the two types of HE are apparent.

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Workshop 19

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The multiple reals of professional learning: Immigrant engineers' experiences in Canada

Continuous learning is essential for professionals such as engineers, given the rapid development of sciences and technology, the changing nature of employment, and the globalization of engineering workforce and business (Ferguson, 1998; Guest, 2006; Upadhya, 2008). In the case of immigrant engineers, professional learning perhaps takes on another layer of significance and complexity. This is so because by default, they need to engage in a boundaryless career; they have to move from one employer to another, and one institutional jurisdiction to another. As a result, there is no institutional support for their professional learning practices. Yet, they are expected to cross boundaries in terms of social, cultural and material differences. Drawing on a qualitative study with immigrant engineers from 17 different countries, this paper explore how engineers engage in professional learning and more importantly how their learning is socially afforded.

Professional learning is commonly defined as the enhancement of skills, knowledge and competence in formal, non-formal and informal manners (Guest, 2006). Within this construct, research often addresses individual learners and the context of learning separately. On the one hand, studies have emphasized that, as individuals, engineers in the "new work order" (Gee, Hull, & Lankshear, 1997) need to be equipped with skills such as team work, and communication, as well as entrepreneurship (Shuman, et al., 2005) and cultural competence (Magala, 2005). On the other hand, research has focused on strengthening the institutional context to encourage engineers to pursue continuous learning. In this regard, special attention has been paid to building a learning organization (Lorriman, 1997), increasing training program

flexibility and responsiveness to the market, distributing the financial responsibility of professional development, and accreditation of professional learning (Guest, 2006).

The paper departs from the binary focus on the learners versus the learning context. Informed by socio-cultural (Sawchuk, 2003; Vygotsky, 1978) and socio-material (Fenwick, 2001) perspectives of learning, and the interdisciplinary interest in the boundaries of socio-cultural differences (Akkerman & Bakker, 2011; Bhabha, 1994; Giroux, 1992; Soja, 1996), immigrants' professional learning practice is defined as a socially organized, materially mediated, boundary-crossing process through which knowledge and practices are transferred, translated, and transformed (Shan, 2014). This conceptualization helps point to multiple reals (Harman, 2014) of professional learning engaged by engineers coming from different countries of origins. For some of the engineers, particularly men and those from Western countries, professional learning is more about learning across different practical differences within professions, establishing social and professional network, and transferring credentials and qualifications to the Canadian context. In other words, professional learning is a relatively unencumbered entrepreneurial pursuit. For others, particularly those from economically less developed countries as well as women who experience career disruptions, professional learning is more of a struggle and labour to make themselves recognizable within the profession. It is through intense identity negotiation that they make their appearance in the profession. Across most of the cases, however, it is also found that cultural artifacts, such as texts (codes and standards), tools and technology also mediate how immigrants may negotiate and manage differences across place

Workshop 12

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Knowing the Practice of Industry 4.0 Through Industrial Work-integrated Learning

In this article we analyze three manufacturing organizations' manifested expressions of different workplace initiatives related to industry 4.0. Key representatives in these organizations raise their concerns regarding changed content and forms of work as an answer to increased automation and digitalization. The wave of industry 4.0 includes smarter industrial solutions such as internet-based networks so that organizations can use connectivity of machines that can tie product development and continuous data production with the factory environment in new ways. Hence, the industrial work environment is under restructuring and industrial companies' work conditions are being transformed. In this article we ask the question: How do industry practitioners that currently are engaged in the transformation processes related to industry 4.0 initiatives perceive their work? Based on interviews with key representatives of three global manufacturing companies we will discuss

implications for industrial work-integrated learning (I-WIL) that takes into account the companies' transformative need to rethink their industrial operations and learning mind-sets. We found that the introduction of disruptive digital technologies drastically changes the companies' operations. Leaders' management needs to be synchronized with practitioners' new work situations and their learning opportunities.

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Keywords: identity, power, Foucault, truth.

"Danger! Learners at Work"

Organisational learning is frequently represented as a risk-free process with almost universal gains, whilst learners gain higher level skills, employing organisations benefit through a more skilled and, therefore, productive workforce. This rather unitary perspective dominates the literature of Human Resource Development and especially that of change management. Even within the work-based learning community phrases such as workforce development and upskilling abound (see Lester and Costley 2010) whilst the notion of the workplace environment as less suitable to learning is positioned as an issue to resolve rather than part of an underlying problem. Issues of power or conflict (or even the potential for conflict) are systematically avoided by the use of models of learning which rely on the individual as a reflexive learner operating within broad notions of a community. How these communities operate, how learners navigate within them or what risks may emerge are largely subsumed within the success of work-based learning as an activity within higher education. Organisational partnerships and benefits are thus placed at the centre of a pedagogy which offer us very little analysis of individual learners or the decisions they make.

This paper explores the role and identity of learners who are conducting research into their own employer's management practices as part of a postgraduate degree programme. Using reflective accounts from the learners themselves a picture emerges of their relationships to the research process and their employer. Further analysis indicates a number of orientations towards both research as an activity and the employer as a sponsor/enabler which give rise to 5 distinct patterns of engagement. These patterns of engagement provide the basis for a discussion of learner identity within the workplace and its implications for learning at both the individual and organisational level.

The analysis is framed within Foucault's conception of regimes of truth, with the learners positioned at the intersection between two regimes truth; that of the organisation and that of the university, each of which provides both opportunities and constraints for learning. Whilst some of these patterns of behaviour reflect organisational benefits (as illustrated by Garnett 2007) others seem to be derived from more traditional academic orientations whilst one partially, at least, may fulfil the conditions expressed by Foucault for "Parresia" or truth

telling as indicated by Ball as "a struggle over and against what it is we have become, what it is that we do not want to be" (Ball 2017, p15).

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Keywords: experiential learning, higher education, community, Vygotsky

Philosophical Reflections on Community-Engaged Learning

This paper addresses epistemological questions related to community-engaged learning that have arisen in my practice as a faculty member. These include questions about its pedagogical justification, the ethical dimensions of experiential learning in marginalized communities, and the role of instructors in structuring community-engaged learning experiences for students. Complementary ideas from Maurice Merleau-Ponty, Emmanuel Levinas, and Lev Vygotsky will be presented to explore, respectively, questions of perception, ethics, and human development.

To help ground this conceptual bricolage, I refer to my experiences as an instructor and as director of a community service-learning (CSL) program at a Canadian university. CSL is an experiential education program that involves students participating in work with community organizations—work intended to complement their studies by helping them integrate theory and practice. However, I believe the pedagogical potential of CSL is deeply affected by binaries that oppose subject and object, mind and body, and theory and practice—binaries that are laminated onto one another at different scales and in different sites. This paper critiques common conceptual understandings of community-engaged learning and presents alternatives.

For example, the university is commonly seen as involved in knowledge production while the community is involved in knowledge consumption (Saltmarsh et al., 2009, pp. 7-8). This presupposition is reinforced in narratives about students "applying" their university knowledge in community, as if the transfer of (conceptual) university knowledge is unidirectional and straightforward. Likewise, CSL is described as "hands on, real world" learning, as if classroom learning is abstract and somehow unreal. Absent from this interpretation is a more nuanced consideration of the relationships between informal and formal learning, and more generally, between subjects and the world. Such discourses naturalize binaries that have been constituted historically.

Although Merleau-Ponty, Levinas, and Vygotsky may seem like strange bedfellows, each contributes crucial insights into the pedagogy and practice of community-engaged learning: Merleau-Ponty's phenomenology of the body—in particular, his concept of chiasm—provides a useful counterpoint to the image of the chasm and other binaries that seem to plague community-university engagement. However, being present to the other isn't always

comfortable; Levinas cautions that difference is often marked as disruptive and dangerous. This is particularly the case when being present involves listening as well as speaking, and then taking responsibility. Transformation is an essential feature of learning although the force or habit and the difficulty of accomplishing changes in practices can make radical change more difficult (Edwards, 2016). Vygotsky helps us understand that knowledge is social, cultural and historical, as well as dynamic; learners externalize their understandings in the process of interpretation and response to situations. Moreover, in a community context, the need for students (and instructors) to learn how to negotiate meaning with community members is key. Individually, each writer casts light upon different aspects of community-engaged learning. In dialogue, their work allows for a productive exchange of ideas that recognizes the challenges of community-engaged learning as well as its pedagogical and societal potential.

Workshop 4

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Conditions for learning managerial work – first-line mangers experience of entering a new workplace in elderly care

This paper reports findings from a research project on first-line managers' work and learning within the Swedish elderly care sector.

Managerial work in human service organizations has changed over the last decades. Recent research points to a demanding work situation and to the problems of attracting and retaining managers in the elderly care sector. The work of managers is emphasised as one of the important aspects for facilitating favourable working conditions, and in this case for staff members to provide quality of care for the elderly. For managers to fulfil this mission, they in turn should be enabled to learn and develop in their professional roles. However, even though they perform important and demanding work, there are limited studies on manager's learning process from a workplace learning perspective.

The aim of this paper is to explore first-line managers' experiences of the conditions for learning when entering as a newcomer in a new workplace context in elderly care. The empirical material is based on thirty-five qualitative interviews with first-line managers in three different organizations in Sweden, one private and two public care providers. The theoretical concept of legitimate peripheral participation is used to analyse the managers' learning trajectories from a newcomer to full membership in the community of practice.

The findings reveal four overall conditions that had a significant impact on the learning process when the managers entered their current workplace. The learning conditions identified were:

(1) the significance of the managers' professional background and previous work experience, (2) job specific training provided by the employer, (3) the degree of social support from other managers, superior manager and employees, and (4) organizational arrangements (e.g. centralized support functions, meetings, geographical distances and location of work). These conditions affected the degree of access to participation (i.e. learning) as each condition could both enable and constrain the managers' advancement from the periphery to full membership of the community of managers. For example, mentorship arranged by the employer did not automatically provide access to participation in cases when the senior manager was unwilling or unable to include the newcomer.

The paper contributes to understanding the conditions for learning managerial work as a newcomer when entering a new workplace context and provides important insights for the development of favourable learning environments for first-line managers in elderly care

Workshop 6

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Keywords: Laboratory technicians, socio-material practice, craft of science and engineering.

Learning in the Laboratory: pedagogies of practice in the "lively world of science"

The laboratory has a central and distinctive role in the education of scientists and engineers. It has been described as the "lively world of science" (Pickering 2017) where scientific knowledge is produced and engineering designs are tested. Classrooms and lecture halls privilege the discursive practices of texts and listening; in laboratories observation and socio-material interactions matter. Students learn about science and engineering in classrooms and lecture halls, in laboratories they become scientists and engineers. Codified and abstract forms of knowledge are rendered visible through the laboratory practices of experimentation, observation, and measurement. The role of laboratory technicians in inducting students into this "lively world" has been under-valued and largely relegated to ensuring that proper procedures are followed. This paper offers a reassessment of the role of laboratory technicians in science and engineering education. The research question guiding this study is: what is the nature of the teaching roles played by laboratory technicians in science and engineering laboratories? The research sites comprise engineering and applied science laboratories in two universities of technology in South Africa, one with a current "disadvantaged" status, the other somewhat better resourced. Interactions between first year students and laboratory technicians were observed and video-recorded over the period of an academic year. Artifact-based interviews (that occurred with the laboratory and that made use of short video-clips and photographic images of the interactions) were conducted with ten laboratory technicians. Ethics clearance was obtained from the lead university and informed consent to video-record laboratory interactions between the first year students and the laboratory technicians, and to interview laboratory technicians, was obtained from

participants. The data were analysed, drawing on concepts of "ontological formation" proposed by Pickering (2017) and Barad (2003). The paper argues that laboratory technicians play a significant role in inducting students into the material world of science. A pedagogy of practice was identified in which laboratory technicians not only demonstrated expert artisanal skills of the craft of science and engineering, helping to shift novice students into more skillful laboratory techniques, but also made connections between laboratory procedures and abstract academic knowledge. The laboratory technicians thus played a key role in integrating academic and experiential learning, embodying a scientific performativity that incorporated the "material and discursive, social and scientific, human and nonhuman, natural and cultural" (Barad 2003, 808). To a far greater extent than generally acknowledged, laboratory technicians enable students' transition from the classroom and academic forms of knowledge, to a world in which knowledge creation and knowledge verification takes material shape. The laboratory technicians engaged in significant interactions with students to ensure that they worked precisely, to spark their interest and curiosity, to inculcate the objective gaze of the scientist, to provoke critical thinking – and always to explain carefully, to show and demonstrate, rather than to "tell". The laboratory technicians were thus instrumental in imparting the underpinning values of science and engineering to the next generation of scholars.

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Keywords: sustainability, industry-academic partnerships

How research centres attain sustainability in industry-academic partnerships

Expectations of university education provision and the extent to which graduates are prepared for the workplace has changed considerably in the past decades. In postgraduate education these trends are often exaggerated. Postgraduate education has changed its focus from preparing candidates for a research career (either in a corporate R&D division or in academia) to equipping graduates with specialized knowledge and training in support of specific industry or university positions. Such forms of specialization are particularly pronounced in engineering fields where increasingly more complex products – and specialized subjects –draw on an ever-greater depth of specialized knowledge and tools. This is typical of Industry 4.0, where technology and society are brought together to develop more specialized artefacts, the inner workings of which are more complex than ever before.

These changes are having a profound impact on university provision and its relationship with industry. A typical industry demand is for more specialized training at Masters level to develop graduates with specialized knowledge and skills to make them more immediately ready for the workplace and be more productive from earlier on in their placement. Students' are increasingly expressing the desire that placements, internships and work experience be part of the university experience. Understandably, this suggests the notion of 'custom designed graduates', which has advantages, for instance a high level of workplace readiness, but also

disadvantages such as being over-specialized in a specific field. There is thus a need to find an acceptable balance in university education to ensure that industry partners who support the programmes are satisfied, but also to ensure that graduates gain skills that are globally relevant and that there are minimal limits to where they can work.

Research centres and communities of practice (COPs) are mechanism at universities that are often instrumental in preparing students and connecting them to industry placements or further academic work. The purpose of this paper is to investigate the structure and operation of such organizations to better understand how they might run effectively, maintain sustainable industry connections, and promote the employability of students. The focus of the study is an investigation into a specialized field of engineering, but it is expected that the methodology and the findings would be generalizable and contribute useful insights to similar interventions in other disciplines. The paper focus on research centres that train embedded systems engineers at the postgraduate level. An embedded system is a task-specific computer built into a larger system; these can range from the smaller controller in a dishwasher to the distributed computer of a modern airliner. There is high demand for graduates in this area; but it is a field in which different industries may use widely differing tools and, considering the nature of embedded systems, these engineers need a depth of contextual understanding to which these systems relate – but developing this depth of knowledge in new employees is a time-consuming and expensive process.